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JUL 1932
DETROIT

A National Newspaper for Every Branch of the Industry

Automotive Daily News

CARS · SHOP EQUIPMENT · TRUCKS · AVIATION · PARTS · ACCESSORIES · TIRES

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Pratt Analysis Refutes Railway Charges Against Truck Line Competition

Discounts Claims of Rail Freight Losses and Attributes Truck Popularity to Better Service Rather Than Price

New York, July 28.—The assertions of the railroads' paid truck tax propagandists that trucks are ruining the railroads' freight business are contradicted by the actual figures, according to an analysis prepared for Automotive Daily News by Theodore D. Pratt, president of the Motor Truck Association of America.

"Actually," said Mr. Pratt, "the railroads' losses have been in passenger rather than freight revenue. So why blame the truck? Interstate Commerce Commission reports show that during the decade ended January 1, 1931, passenger revenues of the roads fell 37.4 per cent., while during the same period freight revenues, despite the claims of these propagandists, actually increased 4.2 per cent.

"The increase of freight revenues is of particular interest when compared with the general business conditions prevailing at that time. The New York Times index of general business, as of January 1, 1931, showed general business was functioning at 78 per cent. of normal. In other words, there had been a drop of 22 per cent. Adding 4.2 to 22 per cent., we see that the railroads' freight business at that time was 26.2 per cent above normal level of business.

"But these facts do not deter the paid press agents from handing out their misinformation. Never has the effect of propaganda, competently directed by a paid and able public relations counsellor, been so noticeable as has the railroad propaganda of the last two years. Many publications, some of which apply very high standards to what they admit to their columns, have swallowed this flood of propaganda, mostly inaccurate and completely misleading, and are giving it much space in their columns.

"It is interesting to note how this cleverly directed but untruthful propaganda has been accepted by the public at large as gospel. It is an excellent proof of the old advertising principle that iteration and reiteration will drive home to the minds of the public conceptions that are not wholly accurate."

Mr. Pratt pointed out that even

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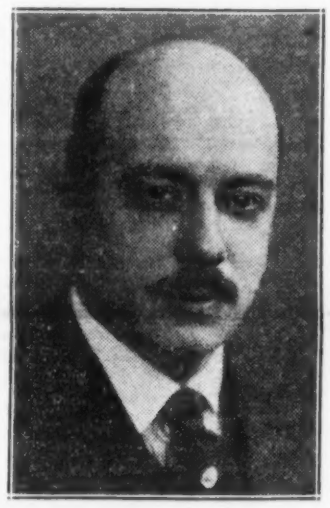
Refutes Rail Charges



THEODORE D. PRATT
General Manager, Motor Truck Association of America

OREGON COURT HOLDS THEFT POLICY TO INCLUDE FRAUD

Salem, Ore., July 28.—When title to an automobile is obtained by a trick, payment being made by a worthless check, the loss of the vehicle is covered by an automobile policy insuring against theft, robbery or pilferage, according to a recent decision of the Oregon Supreme Court in the case of Nugent vs. Union Auto Insurance Company.

An agent had authority from the insured to sell his automobile in the latter's absence. A sale was arranged and title to the car was transferred in consideration of a check which was later returned as worthless. Subsequently it was learned that the agent had been the victim of a man who made a practice of obtaining automobiles in this manner.

The insurer contended that the

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PLYMOUTH'S JUNE SALES IN 45 STATES UP 306% FROM 1931

Detroit, July 28.—With returns from forty-five states in, Plymouth finds that its registrations in June increased 306 per cent. over the same month last year.

For the first six months of this year Plymouth registrations are up 225 per cent. over the first half of 1931. For the first half this year 74,000 Plymouths were titled and the statistician reports that whereas in the first six-month period last year Plymouth had only 2.5 per cent. of the low priced market, in this semester it was 15.8 per cent.

DE SOTO DEALERS, SALESMEN ATTEND DISTRICT DINNER

New York, July 28.—Four hundred De Soto dealers and salesmen attended the New York district summer sales meetings and dinner held in the grand ballroom of Hotel Pennsylvania last evening. This meeting was one of the twenty-six nationwide sales meetings sponsored by the De Soto organization to put in effect sales plans for the remainder of the year.

R. M. Rowland, assistant general sales manager, De Soto Motor Corporation, was the principal speaker. He emphasized the need for extra

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JUNE CAR-TRUCK OUTPUT TOTALED 190,204 VEHICLES

Washington, July 28.—Production of passenger cars and trucks in the United States and Canada during the month of June totaled 190,204 units, according to report of Bureau of Census of the Department of Commerce, released today. June production on this basis was below the total for May rather than above as had been anticipated earlier. The May figure is revised in the report from the earlier total of 193,370 units to 192,505 units.

Reports received by Automotive Daily News in the early part of July indicated a June production of in the neighborhood of 195,000 units. On this basis the June production would have exceeded the May total even before that figure had been revised downward.

On a comparative basis a large percentage of the June production decline was due to lowered output in the Canadian plants. In May the output across the border totaled 8,221 cars and trucks. In June these plants produced 7,112 units, representing a decline of 1,109 units. On the other hand, the American plants, which during May produced a total of 184,284 cars and trucks, in June produced 183,092 units, a decline of only 1,192 units from the comparatively much larger production than that of Canada.

Passenger car output in the United States for the month registered a good gain over May, the comparative figures being 157,685 for May, as against 160,103 for June. Truck output declined from 26,528 in May to 22,754 in June. Taxicab production, which is usually erratic, climbed 75 in May to 235 in June. In Canada both passenger cars and trucks declined. The passenger car figure for May was 7,269, against 6,308 in June, while trucks were 958 in May, against 804 in June.

To total production in the United States, including passenger cars, trucks and taxicabs, for the first half of 1932 reached the figure of 871,423 units, as against 1,572,935 in the first half of 1931, and 2,198,580 in the corresponding period of 1930.

The Bureau of the Census announces also that, according to a preliminary tabulation of data collected in the consus of manufactures taken in 1932, the production of motor vehicles in the United States in 1931 amounted to 2,297,282, valued at $1,388,496,915 (at f. o. b. factory prices), a decrease of 56.8 per cent.

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June Truck Sales in 42 States Run Slightly Below May Level

Ford Shows 300 Unit Gain in States Reported to Date; Total for Month Estimated at About 18,000 Units

Detroit, July 28.—R. L. Polk & Co. today released commercial vehicle sales figures for June covering forty-two states and the District of Columbia, showing a total of 15,156 units disposed of in that territory. This total compares with 15,518 trucks sold in May, 1932, in the states indicated and with 24,223 sold in June of last year.

If the ratio holds for the other six states which have not yet reported, June truck sales, the total for the month will be about 18,000 units, which compares with a total sale in June, 1931, of 28,496 vehicles. In these estimates returns, from the state of Georgia have been omitted, no registration figures having been received for 1931 from that state. The latest report from R. L. Polk & Co. is that Georgia figures complete for the year to date will probably be ready by August 20.

The Ford models have had some effect on the truck sales for June, the total for that make to date being 6,177 units, against a May total of 5,877, a gain of 300 units. However, in June, 1931, in these same forty-two states and the District Ford truck sales were 10,496.

BRADFIELD URGES TRUCK OPERATORS TO FIGHT RAILS

Chicago, July 28.—Operators of trucks, trailers and lorries are in a fight for their economical existence. With highway transportation and distribution grown in the past ten years to be an important and integral part of the country's economic structure, the truck industry today finds itself in a combat without strong leadership. Legislative whims are causing millions of dollars' worth of equipment to be junked. The foregoing are statements by H. C. Bradfield, Chicago manufacturer of the Bradfield taxicabs.

The industry, he claims, is in a maze of varying state laws which are growing more complicated every year. Within a fortnight, in Chicago, the truck operators have been witnessing events, according to Bradfield, that point to Chicago being one of the centers of the fight for the truck operator's economical existence.

Bradfield, in enumerating these events, cites the criticisms being made of heavy trucks breaking up streets and roads; the request of the railroad-owned Railway Express Agency for a certificate of convenience and necessity from the Illinois Commerce Commission, and the

(Continued on Page 3)

REO WILL ANNOUNCE 2 NEW SPEEDWAGONS

Lansing, Mich., July 28.—Reo is about to announce two new speedwagon chassis, one a four-tonner powered with an eight-cylinder Gold Crown engine and the other a two-tonner with a six-cylinder power plant. There are many interesting features of engineering and construction in these new Reo chassis.

These new units round out the Reo Speedwagon line very effectively. Complete descriptions and photographs of these new models will appear in a forthcoming issue of Autmotive Daily News.

WILLYS SHIPMENTS UP SHARPLY IN JULY

Toledo, July 28.—Willys Overland shipments for first half of July show an increase of 93.8 per cent. over same period in previous month and a 46.6 per cent. gain over first half of May, according to H. B. Harper, vice-president in charge of sales.

Compared with first half of July, 1931, gain for same period this year is 23 per cent.

OWNERS INSURANCE DOES NOT EXTEND TO DRIVERS JOYRIDING

Augusta, Me., July 28.—An employee who was instructed to drive his employer's car to wash and polish it and then return it is not within the extended coverage clause of an automobile liability insurance policy when he uses the car for a pleasure trip after washing it, the Supreme Judicial Court of Maine held in the case of Johnson, etc., vs. American Automobile Insurance Company.

The plantiff, a guest passenger, had been injured on the pleasure trip. She obtained a judgment against the driver and when this remained unsatisfied, suit was brought in equity against the employer's insurer on the ground that the employee was covered under the policy because using the car with the consent of the named assured.

The court said that express permission for one purpose does not imply all purposes and at the time of the accident, the car was not "being used with the consent of the named assured."

T. B. HOGAN HEADS CHICAGO YELLOW CAB

Chicago, July 28.—Arthur W. Moore has resigned as president of the Chicago Yellow Cab Company, Inc., with which he has been associated for the past four years, and is succeeded by Thomas B. Hogan, who was elected president and general manager at a meeting of the board of directors held yesterday.

Mr. Moore leaves the Yellow Cab Company and again associates himself with Mr. Charles A. McCulloch, who, with Mr. Hurley, is co-receiver of the Middle West Utilities Company. Mr. Moore will assume the

(Continued on Page 2)

A. T. A. OF CHICAGO CAMPAIGNING FOR INSPECTION LAWS

Chicago, July 28.—Using Pennsylvania's compulsory inspection law for cars and its success as a reason for similar legislation in Illinois, the Chicago Automobile Trade Association has just launched into a campaign for passage of such a law in this state.

In a bulletin of the association just issued, the statement is made that "such a law would benefit the trade, reduce the driving hazard and probably ultimately reduce liability insurance premiums—a direct benefit to the owner."

The Chicago association has cooperated notably in drives for better motor car mechanical condition, establishing safety lanes on several occasions and offering free inspection service. These ventures, however, have of necessity been rendered partially ineffective, inasmuch as participation by owners was entirely voluntary in the absence of legislation making it compulsory.

A state law in Illinois, in the opinion of the trade associations, should require "every motor vehicle to be officially inspected at stated intervals for the mechanical condition of brakes, steering gear, horn and windshield wiper, proper focus and condition of all lights, position and condition of rear-view mirror and state registration plates and condition of tires."

It is stated also that the date when this law is passed "depends largely on the motor vehicle trade in this state." Individual dealers in Chicago feel that such legislation will have a wholesome effect upon the volume of their business, particularly in the service departments, and at the same time be a protection to vehicle owners from the standpoint of accident reduction.

Figures on the number of city motor vehicle licenses issued up to July 1, 1932, quoted by the C. A. T. A., show a decrease of varying degree in all classifications as compared with the same period last year. The tabulations reveal 325,732 licenses for passenger cars under 35 h. p., in the first six months this year, as against 409,878 in the first six months last year; 13,448 passenger cars over 35 h. p., as against 13,908; 31,627 one-ton trucks, as against 36,245; 17,092 trucks over one-ton, as against 20,384; 1,451 demonstrators, as against 1,508, and 6,098 transfers, as against 2,648. The "wheel tax" revenue on motor vehicles paid into the city decreased $59,861 in the first six months this year compared to 1931.

FINANCIAL NEWS

AMERICAN MACHINE

New York, July 28.—American Machine and Metals and subsidiaries' tentative statement for three months, to June 30, shows gross profit on sales of $149,193, with gross income of $212,907. After deduction of expense depreciation, bond interest, interest on bonds, operating loss, etc., net profit before the Federal income tax was $20,014. No comparative statement available.

AMERICAN ZINC

New York, July 28.—American Zinc, Lead and Smelting and subsidiaries for the June quarter show net loss of $29,450, after taxes, interest, depreciation and depletion, comparing with net profit of $152,466 in the second quarter of 1931. For the six months to the same date net loss of $45,356, after taxes and charges, against net profit of $256,030 in the first six months of 1931.

SHERWIN-WILLIAMS

New York, July 28.—Sherwin-Williams declared a quarterly distribution of 50 cents on the $25 par value common, payable September 1 to holders of record August 15. Formerly 75 cents a quarter was paid.

JONES & LAUGHLIN

New York, July 28.—Jones & Laughlin Steel declared a distribution of 75 cents a share on the 7 per cent. preferred, payable October 1 to stock of record September 13. This is on account of accumulations which will amount to $1.75 a share on October 1.

UNITED ENGINEERING

New York, July 28.—United Engineering and Foundry declared a quarterly dividend of 25 cents a share on the common, payable August 12 to holders of record August 2. This is a reduction from the previous payment of 50 cents a share made May 13.

INDIAN MOTOCYCLE

Springfield, Mass., July 28.—Indian Motocycle reports for the quarter ended June 30 net loss of $3,098, after depreciation and other charges, compared with net loss of $40,882 in the preceding quarter. In the June quarter last year net income was $30,205, equal after preferred dividend requirements to 6 cents a share on 290,000 no par common shares. Six months net loss amounted to $43,981 versus net loss of $28,424 in the first six months of 1931.

WARREN FOUNDRY

New York, July 28.—Warren Foundry and Pipe preliminary statement for six months to June 30 shows net loss of $3,700 after taxes, depreciation, depletion, etc., compared with net profit of $190,514, equal to $1.05 a share on 181,000 no par shares of capital stock in the first half of 1931.

PLYMOUTH OIL

New York, July 28.—Plymouth Oil reports for six months to June 30 profit of $946,501 after depreciation, depletion, etc., but before Federal taxes, comparing with profit of $219,838 in the first half of 1931.

PIERCE PETROLEUM

New York, July 28.—Pierce Petroleum reports for three months to June 30 net loss of $18,736 after expenses, franchise, taxes, etc. This compares with net loss of $13,141 in the preceding quarter and net income in the second quarter of 1931 of $136,016, equal to 5 cents a share on 2,500,000 no par shares of capital stock. For six months ended June 30 net loss was $31,877 after charges and taxes, comparing with net income of $280,440, equal to 11 cents a share, in the first half of 1931.

DEERE & CO.

Moline, Ill., July 28.—Directors of Deere & Co. yesterday declared a dividend on the preferred stock of 10 cents a share, payable September 1 to stockholders of record August 15. The rate on the preferred stock has been 35 cents a share a quarter, but was reduced to 10 cents.

PLATE GLASS OUTPUT

Pittsburgh, July 28.—Total production of polished plate glass by members of the Plate Glass Manufacturers Association for the month of June was 4,909,988 square feet, compared to 3,015,943 square feet in May and 6,408,660 square feet in June, 1931. This makes a total of 29,291,919 square feet for the first six months of 1932, against 46,291,919 square feet in the first half of 1931 and 30,463,123 square feet produced during the last half of 1931, according to Plate Glass Manufacturers of America.

OKLAHOMANS SEEK REDUCTION OF TAXES

Oklahoma City, July 28 (UTPS).—Carrying on their drive for signatures to petitions to ask gasoline and automobile license tax reductions in the November election, a committee representing petroleum marketers plan to get 46,000 signers, a number sufficient to get the measure on the ballot. The plans calls for a reduction from 4 to 2 cents a gallon in gasoline taxes and the licensing fee to be put o na basis of $3 for cars costing less than $1,000 and $5 for those above. An extensive campaign has been launched.

SPARKS from DETROIT

Fred S. Duesenberg

* * *

Dissecting Tires

* * *

Embarrassing Moments

* * *

Grant on Way Home

Chris Sinsabaugh—Detroit Editor

THE automobile industry lost an engineering genius when Fred Duesenberg died. Usually a step ahead of the field, he lived to see several of his pet theories put into general practice. He it was who made us see the light as to such things as the straight-eight engine, four-wheel brakes and the super-charger, and he was the manufacturer of America's highest priced automobile.

* * *

IT WAS RACING that really made Fred Duesenberg. He used to come to the Algonquin hill climb with his two-cylinder Mason and clean up in his class and when the Elgin road races were run there always was a Duesenberg team in and a Duesenberg always was in the money.

With the passing of road racing Duesenberg turned to the speedways and the records show him as the strongest supporter Indianapolis ever had, and he won in 1924, '25 and '27 with Boyer, De Paolo and Souders. Also Tommy Milton, driving a sixteen-cylinder Duesenberg, smashed the world's straightaway record on the Daytona beach.

* * *

IT WAS BECAUSE of racing that he became the great engineer he was. I always have credited him with being the four-wheel brake pioneer in this country because he put this equipment on his racing cars at Elgin as far back as 1912. This, I think, was the first time we heard of four-wheel brakes. Also his success with the straight-eight on his racing cars at Indianapolis led to its adoption by the industry. He also introduced the super-charger in this country. Franklin is now using it as stock.

* * *

THE OTHER DAY the column put a Chevrolet coach on the dissecting table and told you about the materials that enter into its construction. Now the class can take up tires and let the chemists of the United States Rubber Company give you a few surprises.

Reading their text book, the conductor finds seventy-eight raw materials, gathered from all parts of the world, are used in the manufacture of casings. Doc Lemon gives us a laugh in mentioning acetone, used in tire development. He says acetone is just a batch of corn whisky gone wrong. And then he explains that if the mash gets along without feeling the effect of certain bacteria, it turns into good

(Continued on Page 4)

MORE MILEAGE · BETTER SERVICE · LONGER LIFE
"NORMA-HOFFMANN"
PRECISION BEARINGS
BALL, ROLLER AND THRUST
NORMA-HOFFMANN BEARINGS CORPORATION, STAMFORD, CONN, U.S.A.

T. B. HOGAN HEADS CHICAGO YELLOW CAB

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presidency shortly of one of the important Middle West units.

At the Yellow Cab meeting Joseph J. White was elected a director and Rudolph Bieze, who has been treasurer of the Yellow Cab Company for some time, was added to the board of directors, both replacing Messrs. Marwich and Moore, who resigned from the board.

Mr. Hogan, who assumes the presidency of the Yellow Cab Company, has served successfully in practically every operating job in the taxicab business, including a period that antedates the existence of Yellow Cab, and this goes back to the old days of the horse cab, long since vanished from Chicago streets.

Classified Advertising

Classified Rates 5c Per Word

EXPERIENCED automobile man seeks position as truck fleet supervisor or used car man. Fifteen years supervising repair work, appraising for motor manufacturers and insurance companies, both pleasure and commercial. Excellent sales record. Box 301, Automotive Daily News, 350 Hudson Street, New York city.

DRIVER-SALESMAN TRAINING IS OUTLINED BY FLEET OPERATOR

To aid bakers throughout the country to improve the sales performance of their drivers, the Procter & Gamble Company of Cincinnati has outlined in book form for its customers a complete program of driver-salesman training, many parts of which have been adapted from the company's own training programs. The company has prepared complete instructions for the sales manager, the route supervisor and the salesman.

Each driver-salesman, under the plan, is given a booklet entitled, "Let's Go!" The booklet itself is a course in the essentials of driver-salesmanship. "Let's Go!" is also incorporated in the main book, entitled, "Training the Route Salesman," which is intended for consumption by executives.

Results and conclusions from the early training of each driver-salesman are tabulated on an ingenious "Salesmen's Progress Report," on the reverse side of which there is a "Judgment Blank."

These progress reports are turned in from time to time by the supervisor to the sales manager, and provide a quick check on the caliber of each individual driver-salesman. The progress report has space for ratings on sixty-six separate ratings On each point the salesman can have five different ratings. These ratings are (1) superior; (2) above average; (3) average—just satisfactory; (4) below average; (5) poor.

The sixty-six ratings are separated into nineteen main divisions. For example, under "The Bill Pad," the salesman is rated for use in credit stops, use as notebook and use as figuring pad. Other divisions and subdivisions under which the driver-salesmen are rated include:

The truck — Condition, care in operation, mileage economy; planning—use of route sheets, care in planning, definite objectives, follow through of planning; ordering—care in ordering, definite outlets; serving the route — well planned routing, serves all stops daily; store displays —care in making displays, neatness, uses display material, appreciates importance, care of empty boxes; store procedure — uses route book, makes order first, gets all store work checked, makes displays, follows definite routine.

Settlement—Settles promptly, accuracy; stales — gets grocer's co-operation, changes variety, does not overload, keeps stales low, keeps fresh returns low; products—knowledge of goods, handles full lines, rotates goods.

Territory — Knowledge of trade, studies trade preferences; complaints — knowledge of policy, reports to bakery; collections—knowledge of policy, unauthorized credits; soliciting—covers territory systematically, plans each call, use of sampling, reaches objectives.

Conduct in Store—Inspires confidence, business-like, does not waste time. Sales Ability—Secures grocer co-operation, talks profit possibilities, talk quality, talks service, answers objections intelligently. Attitude—Toward company, toward trade, toward competitors, toward training.

On the reverse side of this "salesman's progress report" there is the "judgment blank," with 16 subdivisions for separate ratings. Under "aggressiveness," the first of the 16 subdivisions, the supervisor can check one of the five following characterizations of a man: Uses no pressure, uses little pressure, uses pressure, bears down, dominates each interview. The following are the other 15 subdivisions, with characterizations possible under each:

Specific Knokledge—Doesn't know his job, often displays ignorance, shows fair working knowledge, well posted on his job, knows his job thoroughly.

Understanding of Human Nature —Poor judge of human nature, often misjudges his man, sizes up people fairly well, seldom misjudges his man, judges his man quickly and accurately.

Planning Ability—Works in haphazard, aimless fashion; seldom plans ahead, plans out his work ahead, always plans in advance, shows vision in planning.

Judgment—Makes costly errors of judgment, does ill-considered things, employs common sense, displays good judgment, displays rare good judgment.

Sales Instinct—Passes up sales opportunities, seldom takes advantage of opportunities offered, takes fair advantage of sales opportunities, watches out for sales opportunities, never passes up an opportunity to make a sale.

Enthusiasm—Lacks ability to arouse, gets little response, arouses fair enthusiasm, peps up dealer, carries dealer to high pitch.

Co-operativeness — Obstructionist, difficult to handle, cooperative, co-operates willingly, highly co-operative.

Initiative—No self reliance, waits to be told, gets into the game, strikes out for himself, full of ideas which he carries through.

Industry—Neglects his work, does just enough to get by, does his bit, on the job every minute, puts in extra hard work.

Tact—Often gets in wrong, occasionally irritates, avoids friction, enters into customer's mood, adapts himself to any situation.

Personal Appeal—Arouses aversion, fails to attract attention, attracts favorable attention, arouses immediate liking, attracts irresistibly.

Leadership—Fails to inspire confidence, does not impress, carries conviction, inspires confidence, exerts wide influence.

Dependability—Lacks due sense of responsibility, sometimes disappoints, seldom disappoints, lives up to his promises, unusually dependable.

Health — Sickly, little reserve energy, fair health, good physical trim, great stamina.

Appearance—Gives very unfavorable impression, makes a poor appearance, appearance satisfactory, good appearance, creates fine impression.

The procedures contained in "Training the Route Salesman" were prepared by the sales research department of the Procter & Gamble Co., at the request of the Crisco department. Among the many companies now using some of these procedures is the Drake Bakeries, Inc., cake manufacturers.

K. A. SKINNER DIES

Norfolk, Mass., July 28.—Kenneth A. Skinner, first president of the Boston Auto Dealers Association and former champion roller skater of the world, a title held for twelve years, died after a long illness in Pondville Hospital. He was 73 years old. In 1900 he settled in Boston, establishing a renting agency for automobiles. Later he took on the sale of several automobile companies.

BRADFIELD URGES TRUCK OPERATORS TO FIGHT RAILS

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law banning from Illinois highways transport trucks over thirty-five feet long. He maintains this is a start in a vigorous campaign to keep truck operators' attention riveted on things other than the actual operation of their business.

While the present truck manufacturing executives are lending their name, time and money in this fight for the economical existence of the truck operating industry, Bradfield says it is not fair to expect them to go too far. He claims no matter how sincere they may be, it is not justifiable for them to lean too far in one direction when there is a possibility that the railroads will in the not distant future be their largest buyers of trucks. Truck operators, road building organizations, farmers' unions and kindred associations, should lead the fight and do it under strong leadership, he maintains. He points out that under John Hertz's leadership the taxicab operating industry had public approbation and made money; without it they have lost public good will and not more than a handful of taxicab companies throughout the country have made expenses.

"The battle that is now on," Bradfield declares, "leads to the 1933 legislative sessions and possibly the lame duck session of congress next March. The truck operators are going to interview law makers in 1933. The result depends on the program the operators map out now and the leadership displayed.

"In January thirty-five governors are to be inaugurated; thirty-four state legislatures meet next year. Present tax law, it is safe to predict, will fail by wide margins to produce expected revenues. The already overtaxed automobile industry will get more tax. It is not only an easy tax to collect; it is also an easy tax to impose. I qualify this last statement for the truck industry by saying that it can be made a tough one to impose if the truck operators' leadership does constructive work between now and the November elections.

"This fight is one between the railroads and legislatures on one side and the truck operators on the other. The government-dictated-to railroads want a bigger slice of this truck-operating business than they are getting. So far their efforts, through their subsidiary companies or door-to-door deliveries, has produced a large volume, but they want more. In ordinary times they would go out and buy up truck-operating companies with good contracts on their books. The railroads must keep their lobbies. There is no better way to curry favor with lawmakers than to suggest legislation that has 'pok' in it. Three million, five hundred thousand registered trucks is something not to overlook, whether you are a national, state or local lawmaker, when you are trying to dig up money to run the national, state, county or city government or balance budgets.

FINE CARS SINCE 1902

MORE than half the Marmon Sixteen owners in an important Eastern city of 325,000 population have purchased their second or third Sixteen.

MARMON

SALES DEPARTMENT INDIANAPOLIS, IND.

MOTOR ACTIVITIES

By RAY B. PRESCOTT

(Marketing Counselor)

New York, July 28.—Ford and Chevrolet production schedules showed no change last week, while most of the other manufacturers eased off a bit. Hudson, with its new Terraplane, will help sustain the present level, but probably not for long, as the buying season is now on the wane and will continue so until the end of the year, if normal procedure follows.

The encouraging signs that have recently appeared may be just another mirage to be followed by another nose dive, but somehow the present portents of stabilizing conditions seem to have a more permanent character than previous rallies and may lead to sustained buying through the fall months.

NEW BUS TERMINAL

Evansville, Ind., July 28.—Construction of a motor bus terminal from which, beginning August 15, a total of fifty-five buses will leave daily for national runs and regional parts, has been started here through remodeling of the former Evansville Suburban and Newburgh traction line station, 5th and Locust streets.

FLEET OWNER LISTS

OPERATORS HAVING	Number of Companies	No. of Listings	No. of men to see (Mailing pieces required)	No. of Automotive Vehicles	No. of Vehicles Per Contract
10 or more	16,500	19,000	25,000	1,500,000	60
100 or more	1,150	2,100	3,400	700,000	210
1,000 or more	75	600	1,000	300,000	300

LISTS THAT ARE KEPT UP TO DATE

Lists that show the Name of the Man to See and the total Number of Vehicles

Each Local list is zoned, routed, alphabetically indexed, and vocationally keyed

We can supply a local list for any Territory or a national list

FLEET OWNER LIST CO. 1817 B'WAY, N. Y. C.

Here's what makes it "click"

IF YOU have had the impression that this unique Schrader Dublchek Valve Cap is "just another gadget," take a look at the painstaking engineering that's in it. It's a real accessory!—designed to do an important job; to do it efficiently under all conditions, and to be a real time and labor saving convenience. Know its construction and you'll understand why it "clicks" with every car, truck or bus owner the minute he sees it.

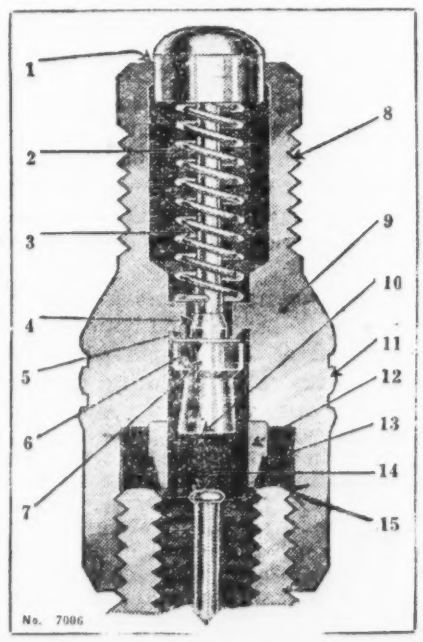
FLEET OWNERS find Schrader Dublcheks a highly profitable investment in tire economy and time saving.

SERVICE STATION and ACCESSORY DEALERS find every motorist an easily interested prospect for Schrader Dublcheks.

New low prices make the cost trifling and the value inestimable. The name "Schrader" guarantees quality. Obtainable through regular sources of supply. A. Schrader's Son, Inc., Brooklyn, Toronto, London — *Makers of Pneumatic Valves since 1844.*

INFLATE AND TEST PRESSURE THROUGH VALVE CAP

Four operations saved in inflating every tire. No dust and valve caps to unscrew and replace. A permanent cap that can't be lost. An effective guard against dust and dirt. A double-check against loss of air. Guaranteed air-tight up to 250 lbs. if affixed according to directions. Fifteen *superior features.*



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2. Stainless steel spring.
3. One-piece rigid pin.
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5. Washer seat integral with pin.
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7. Solid washer cup integral with base.
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9. Strong cap barrel machined from solid brass.
10. Wide plunger base; sure contact.
11. Knurled grip for pliers.
12. Valve - mouth - sealing washer.
13. Recess expansion take-up.
14. Ample clearance.
15. Air-tight even with hand application.

TIRE VALVES Schrader TIRE GAUGES

Reg. U. S. Pat. Off.

DUBLCHEK VALVE CAP

BE SURE IT'S A SCHRADER—LOOK FOR THE NAME

Automotive Daily News

"Of, By and For the Entire Automotive Industry"

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FRIDAY, JULY 29

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Mergers

JUST at the minute the financial district of New York is filled with rumors of mergers among the independent automobile manufacturing companies. "Another General Motors is in the formative stage," runs the popular version, which bandies about the names of Auburn, Nash, Packard, Studebaker and Willys-Overland with a fine disregard of internal evidence.

For some reason or other the automobile industry always has been a fruitful source of rumors and mergers are the favorite sport of the whispering campaigners. Obviously, the present business situation opens the door to the possibility of mergers. In some amalgamations there are opportunities of increasing efficiency and producing economies that are particularly attractive during such a period as the one we are going through. Then too, the difficult days of depression have caused a shrinkage of dealer personnel. Many automotive merchants have gone out of business and two companies with reduced dealer organizations could by merging put a larger force of retail merchants in the field to sell their combined lines.

On the other hand some of the rumors join companies where the internal evidence is all against any possible benefit from merging. Such evidence means little to the people who go about whispering of the inside information that they are possessed of, most of which must come from the corner bootblack judged by its lack of financial logic.

Of course there may be some mergers among independent vehicle manufacturers before the depression has given place to actual revival. There is no definite indication at the present moment that anything of the sort has been lined up and we shall have to await something more than obvious rumor before we begin to prick up our ears.

Machine Made Unemployment

In a recent report by the National Industrial Conference Board attention is called to the tremendous role that farm machinery has played in changing employment conditions in agriculture. On the great wheat farms of the West, for instance, machinery has displaced 97½ per cent. of the manual labor once used. In other words two and a half laborers are now used where once 100 were employed.

This probably is an exaggerated example of what machinery can do to manual labor when the two come into conflict, but even in our shops and factories the machines have displaced a heavy proportion of the hand labor once used.

In the ultimate, this displacement of hand labor by machines is going to work for the benefit and happiness of the worker. But before we reach that Utopia where the laborer feeds a machine for three or four hours a day and thereby earns a comfortable living, there are bound to be slack spots where machinery has displaced human beings and has left them absolutely without visible means of support.

We are much mistaken if this condition has not been a contributing factor in producing the present depression. While we were booming full speed ahead, American buying power was great enough to absorb the products of all our vast machine equipment and keep labor busy feeding those inexorable giants. But the moment we slacked up in buying, the unceasing machines kept pouring excess products into a market that could not absorb them. Very soon a glutted market was in evidence and the owners of the machinery had to call a halt. The men and women who had been feeding the machines found themselves out of jobs—and here we are. It would be wrong to call this condition the basic cause of our depression, but certainly it is a contributing factor or perhaps it would be even fairer to say a symptom of some 'eep and far reaching economic illness.

SPARKS *from* DETROIT

(Continued from Page 2)

alcohol. But if it develops a bad case of bacteria, it becomes one of the black sheep of the alcohol family, either wood alcohol or its more vicious brother, acetone.

* * *

OTHER MATERIALS used in tire manufacture and their native locals are aluminum powder from Alabama; carbon-black from Texas; clay from South Carolina; cotton from Egypt; gasoline from Oklahoma; graphite from Niagara Falls; palm oil from Africa; resin from Louisiana; latex from the Malay Peninsula; talc from France; tin from Singapore, and so on around the world.

* * *

ONE OF LIFE'S embarrassing moments so far as Dudley Carson is concerned, bobbed up in Birmingham the other day. Dudley, be it known, is one of the Campbell-Ewald publicity staff editing the Pontiac Chieftain, one of B. O. P.'s dealer newspapers. With Russ Wilks, Carson was putting the Chieftain to press at the printing plant in Birmingham.

Carson had to go to Royal Oak for something and Wilks told him he could take his car, parked outside. Dud was gone half an hour and on his return found waiting for him a brawny laborer, who accused him of stealing his, the laborer's, car. Wilks was called and backed up the laborer. Then it turned out Carson had taken the wrong Pontiac, but that didn't settle the matter. Trouble seemed imminent. Carson offered to pay for the gasoline used, but the offer was declined. Finally the case was closed by Carson paying $1 for the time wasted by the laborer waiting for his car to come back.

* * *

R. H. GRANT, head of B. O. P., who has been vacationing in Europe, will be back at his desk next week, it is said, and then things will start to hum in a good old-fashioned way. Waiting for him will be other executives who have rushed through their vacations so as to be ready for the chief on his return.

CHINA MARKET IMPROVES IN 1932

Washington, July 28.—Despite general depression, internal disturbances, and floods in the Yangtsze Valley, combined imports of motor cars and trucks into China (excluding Hong Kong) for the first quarter of 1932 exceeded those for the same period of last year by nearly 15 per cent., according to Trade Commissioner A. Viola Smith, Shanghai, in a report to the Commerce Department. Passenger cars made the best showing but trucks declined somewhat.

The China market, always one of "price," it is pointed out, has been further restricted to low-priced cars by the adverse exchange levels which have prevailed for some time. In Shanghai, occasional sales of medium-priced cars are made but high-priced vehicles are rarely sold. Demands in the last six months have very definitely been for the smaller type of car with low fuel consumption.

Buyers are looking for a really smart and dependable car which will give 24 to 30 miles per gallon of gasoline, and sell in the low priced range. While conditions vary in the several individual sections of the country, the sale of automotive products in south China during the second quarter of 1932 were higher than during the same period of 1931.

SLIGHT EMPLOYMENT DROP IN NEW JERSEY

Newark, N. J., July 28.—Employment in 711 plants in major New Jersey industries fell off 1.4 per cent. between May 15 and June 15 and total weekly wages paid dropped 3 per cent. in the same period. These figures are contained in the monthly survey made public today by Col. Charles R. Blunt, commissioner of labor.

Russell J. Eldridge, state director of employment, reported to Col. Blunt today thta sixteen employment bureaus of the State Department of Labor during June placed 43.8 per cent. of applicants. In June, 1931, this figure was 48.5 and last May it was 45.5.

"Nevertheless," Mr. Eldridge comments, "the placement of men alone, which is often more significant in labor conditions, was improved in June over a year and a month before."

COMING EVENTS

AUGUST

22-26—**Denver, Col.** American Chemical Society Convention.
30-Sept. 1—**Cleveland.** S. A. E. Aircraft Meeting

SEPTEMBER

12-17—**Cleveland.** Machine Shop Practice Meeting, A. S. M. E.
15-17—**Atlantic City, N. J.** American Trade Association Executives Annual Meeting.
19-20—**Harrisburg, Pa.** Pennsylvania Automotive Association Convention.
22-23—**Chicago.** National Association Motor Bus Operators.

OCTOBER

3- 7—**Buffalo, N. Y.** National Metal Congress. Sponsored by American Society for Steel Treating, with co-operation of American Society of Mechanical Engineers, Institute of Metals and Iron and Steel Divisions of American Institute of Mining and Metallurgical Engineers, American Welding Society, Wire Association.
3- 7—**Washington, D. C.** National Safety Council Meeting
3- 7—**Buffalo, N. Y.** National Metal Exposition, 174th Regiment Armory, W. H. Eisenman, 7016 Euclid Ave., Cleveland, director
4- 6—**Toronto.** Transportation Meeting, S. A. E.
13-22—**London, England.** Olympia Show.
17-22—**Atlantic City, N. J.** National Hardware Association, Accessories Branch.

NOVEMBER

14-16—**Atlanta, Ga.** National Tire Dealers' Association.

DECEMBER

2- 3—**Chicago.** National Standard Parts Association Convention.
5- 9—**New York.** Annual Meeting A. S. M. E.
5-10—**New York.** Power and Mechanical Engineering Exposition
5-10—**Detroit.** Third Annual Joint Trade Show, National Standard Parts Association and Motor and Equipment Manufacturers' Association Convention Hall

1.175

1.175 means little to us — but a lot to an automobile battery. It's the battery's danger mark on test . . . an indication that a charge is necessary.

Automobile owners pay over $10,000,000 every year to have their car batteries restored to service.

Get your share of this huge battery charging market . . . with Tungar. G-E Tungar is the best battery charger that you can install, because: it is inexpensive and easy to operate . . . its net returns are exceptionally high . . . it never wears out . . . for 16 years it has earned the praise of the leading garages and service stations.

You have a choice of seven sizes — there is profit in them all. Learn more about them. Just write Section A-1027, Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC

AUTOMOTIVE PRODUCTS

MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

SPARE UNITS READY FOR USE KEEP THIS OPERATOR'S 200 TRUCKS IN CONSTANT SERVICE

The keeping of a sufficient number of spare units, in first rate condition, ready for immediate installation in a disabled vehicle, has been found by the Drake Bakeries, Inc., to be the cornerstone of economy, and of efficient, unfailing operation. The company's fleet of 200 vehicles, operating in several cities in the East and Middle West is under the general control of G. A. Hoernle, general manager of the company.

Maintenance of about three-quarters of this fleet—those which cover New York city, from garages in Brooklyn and The Bronx, as well as the vehicles in Philadelphia, Hudson, N. Y.; Albany, Bridgeport, and Riverhead and Babylon, L. I., comes under the direction of John Wottke. Altogether there are 152 vehicles under his jurisdiction.

When Mr. Wottke first went with the Drake company, he found a large quantity of miscellaneous parts lying around. Disliking to see so much of the firm's money idle, he decided to use these parts in a way which would eventually mean a saving in number of vehicles necessary.

He used some of them to make up a spare motor. Others served to build a spare transmission and a spare rear end. At present, Mr Wottke keeps two spare engines in readiness. Each is well cleaned and painted and in first class, spick and span condition. One is for the Fords and the other for the Whites, these two making up most of the one-ton capacity jobs, which are the bulk of the Drake fleet. Likewise, Mr. Wottke has two spare transmissions, several spare rear ends, sets of brakes already relined and all other necessary units.

By this method, Mr. Wottke has virtually eliminated the necessity for spare cars. When a vehicle breaks down in Philadelphia, Albany, Hartford or Bridgeport, Mr. Wottke sends the needed unit to one of these points by the outside trucking firm which takes the Drake products to these cities at night. The same truck brings back the damaged unit.

The nearest thing to a spare car possessed by the company is a combination spare car and wrecker developed by Mr. Wottke. For this purpose Mr. Wottke used a 3½-ton A. B. Mack. He installed tracks for the crane on the floor of the body. The crane can be shoved back in the body so that it cannot be seen or pulled out on the end when its services are required.

In case of an accident or breakdown the utmost speed is necessary to prevent any delay in delivery of the company's perishable product. The mechanic who drives out in the combination wrecker and spare first tows the disabled car to the nearest garage. He then transfers the load to the wrecker-spare and proceeds with the driver-salesman on his route, helping as much as possible. Next the mechanic returns to the local garage and tows the damaged vehicle back to the shop in Brooklyn. There a new unit or units is installed, and the vehicle is ready for service next day.

The wrecker-spare is clean and well varnished, and cannot be distinguished by a customer from a regular delivery vehicle.

Mr. Wottke does not believe in fads and frills. He spends much of his time actually working on cars himself, thus saving a man. He saves another man by keeping all the vehicle records himself. He is enabled to do this by reducing the accounts to be kept to the minimum essentials. What accounts he has he keeps scrupulously up to date. He maintains his own office in Brooklyn. Those in charge in other cities send him their accounts.

For a complaint sheet Mr. Wottke uses an ordinary ruled sheet of paper. On this sheet he makes a permanent record of complaints about each car as it comes in. For the electric cars he has a daily report, on which are recorded the odometer reading at start and finish and ampere hour discharge for each vehicle. On a "daily automobile operating report" he records, beside the number of each car, its odometer reading at start and finish and gallons of gas and quarts of oil used.

He has simplified the entries on the vehicle repair card by listing on it only the number of the car, start and finish of the repair job, mechanic's name and work done. For use by mechanics elsewhere than in Brooklyn he has space on the back of this card for listing materials used on the repair job and their prices. In loose leaf notebook he keeps a record of painting costs.

Mr. Wottke maintains the above accounts are all that are necessary, and that for a fleet of 150 to 200 cars they can be kept as well by the man on the job as by a clerk engaged for the purpose.

Mr. Wottke has found he obtains more satisfactory results by making up longer cam levers for the foot brakes. This has brought it to pass that if grease leaks onto the lining, it won't interfere with stopping of the car, and that it is possible to wear the lining down to the thinnest point.

Previous to the use of these longer levers, if the least bit of grease got onto the brake lining, it had to be relined. It was usually necessary to reline about every six months, while now every two years is sufficient.

The company has found that a clean, shiny appearing body stimulates cake sales, and convinces the public of the sanitary quality of the product handled. And Mr. Wottke maintains that if one has a clean, attractive vehicle, it is foolish to spoil the impression with a dirty spare tire, fastened with rusty attachments, either to the side of the vehicle or underneath.

He therefore designed a special box to hold the tire, and had it built in the company's own shop. The box fits under the rear. The tools were placed in the same box. The tail light and license plate are fastened to the door of the box. The rear bumper is specially designed to serve as a step.

The company makes use of the dull season in July and August for overhaul, which takes place about every 30,000 miles with the 152 vehicles under Mr. Wottke's care. Four men in the Brooklyn shop do all the overhauling, with the exception of body work, which is handled by the Cantwell Body Corporation.

No extra trucks are hired for the peak seasons, which occur in the spring (during the berry season), and in the fall and early winter (when holidays stimulate sales).

In the Brooklyn headquarters at night, a washer, a mechanic and a helper are on duty. The washer covers nine or ten cars in a night.

Among the 152 cars under Mr. Wottke's control, there are only three heavy duty vehicles. These are a 3½-ton B. C. Mack, a 7½-ton A. C. Mack, and a five-ton White, used for transporting cake to the centers of distribution in The Bronx and Newark. Cake is sent to Babylon and Riverhead by Railway Express.

No use is made of the governor and drivers are allowed to proceed as fast as consistent with safety, to complete deliveries of their perishable product.

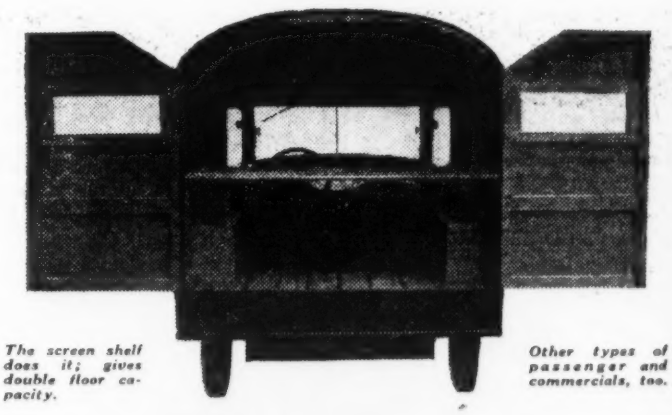
BRANTLEY COUNTY, GA., GOES COMPLETELY 'NERTZ'

Waycross, Ga., July 28.—Automobile trucks, if they be laden with what is classified as "dead freight" or "dead express," cannot turn a wheel in Brantley county on the Sabbath day. The Brantley county grand jury recently recommended to Sheriff Newton that the Georgia law, heretofore applicable to railroads, prohibiting the movement of commodities other than perishable goods on Sunday be enforced, the law being interpreted as applying to trucks as well as railroads.

According to enforcement officers of the county, the crusade has been effective, and trucks now are giving Brantley county a wide berth on Sundays.

Lowest Delivery Cost In America

The NEW *Double-Area* Bantam Van

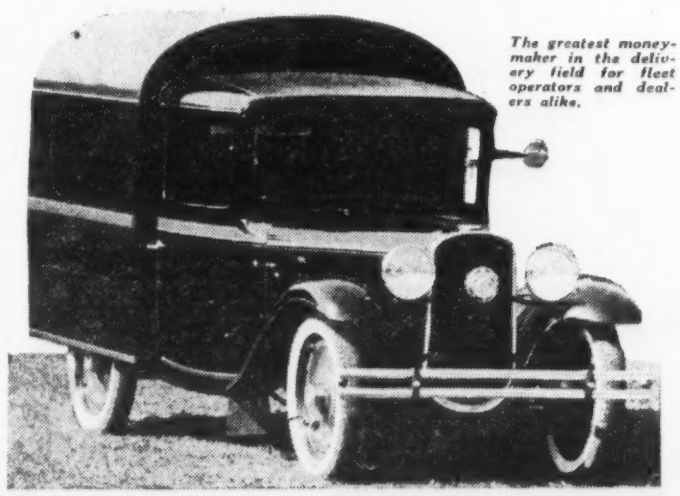


The screen shelf does it; gives double floor capacity.

Other types of passenger and commercials, too.

Now bakers, grocers, milliners, druggists, shoe merchants and dozens of other classifications may further profit by the economy of the Bantam, by the double-area construction, which gives twice the floor capacity. Note the *screen shelf*, amply supported, which permits of a double load being carried at the same cost—the lowest in America, even with half-capacity loads.

Dealers and distributors everywhere are cashing in right now on fleet and individual sales of this Bantam Van. Its economy of 40 miles per gallon and 30,000 miles on tires is matched only by its fine service record. Thousands who use these vehicles make a profit from them; and dealers who sell them have the sweetest franchises in the country, with the lowest floor-plan cost in the industry.



The greatest money-maker in the delivery field for fleet operators and dealers alike.

Fleet Operators

Here is a well-designed piece of machinery, constructed in the finest manner of the best materials, with a 10-year service record here and abroad that brings down maintenance where you can make a profit on operation. Forty-four cubic feet of load-carrying space, and now, with the screen shelf, double the floor area—and a marvelous performer.

•

Any Dealer can make big profits

If you are now handling another line it costs little to add the Bantam passenger cars and vans. Eight to the carload, low delivery cost. Everything about the Bantam is low except the profit for the dealers. Yes, at $395 base price too. If you're interested in profit facts, in what other dealers are doing right now, get in touch with the factory, the originators of the Bantam idea. Let us tell you the facts about a distributor who has sold 300 Austins at retail since March 15th, 1932.

•

AMERICAN AUSTIN CAR CO., Inc.
BUTLER, PA.

Production - - Engineering - - Factory

Cutting Costs in Fleet Operation

This is the tenth installment of a paper presented by E. C. Woods, superintendent of transport, San Francisco Division, Pacific Gas and Electric Company, at the recent section meeting of the S. A. E. in San Francisco.

One other condition has bothered us for some time. As the valve continually pounds on the seat, it finally gets pounded down into a pocket. When this condition exists, it is impossible to get proper results, as the valve opening is lessened and is not large enough to scavenge the cylinder properly. To correct this condition it is necessary to install a new seat and true it with the surface of the engine.

The use of replacement valve seats has proved to be very successful and profitable in saving and reconditioning cylinder blocks and cylinder heads, which otherwise would have been discarded or forced to run under unfavorable conditions. The use of replacement valve seats eliminates the necessity of the oversized valve head, which, in many instances, have been the only means of saving a cylinder block or cylinder head when the port hole has been cut too large for the regulation valve. The oversized valve head serves its purpose after a fashion, but it is not correct in theory or practice, as it gives the engine a valve-port clearance of a dimension unlike the others. In most cases it is possible to repair cracked seats in cylinder blocks or cylinder heads by installing replacement seats. However, if the crack is large or deep, it is advisable to weld the crack first to strengthen the metal, then to install the replacement valve seat.

FACTS ABOUT VALVE RESEATING

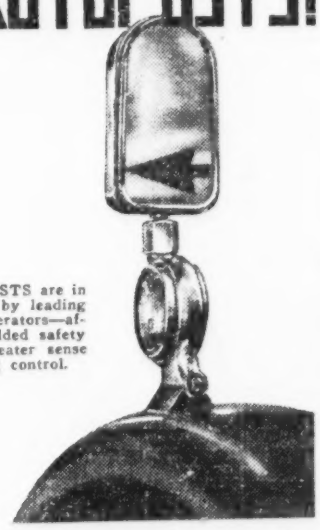
It is interesting to review what has and what has not been done toward keeping the vehicle in the same, or nearly the same, condition in which it left the factory. Just a few years back a repaint job meant tying up a car for weeks. Now a far better job can be done in a few days. Tires could be found everywhere that were treadworn or blown out, which were thrown away at the first sign of distress. Now we operate up-to-date repair shops exclusively for tires. Brake-lining service stations, top and body plants, wheel trueing and rebuilding shops, battery and electrical service stations, crank shaft, cylinder and piston grinders and countless manufacturing plants are engaged in the reconditioning of

(Continued on Page 8)

Fleet-Owners:

LAUGH AT TRAFFIC TERRORS

AUTOPOSTS!



AUTOPOSTS are in operation by leading Fleet operators—affording added safety and a greater sense of driving control.

. . . cut accident (and serious loss) hazard to a minimum with this new scientific safeguard

Those pesky "Sunday Drivers" . . . crashes at turns . . . side swiping and smashed fenders in crowded traffic . . . accidents due to running off into ditches, fences and road shoulders . . . layups for engine repairs.
Unusual hazards face drivers today, raise operating overhead, trim down profits.
Equip your cars with AUTOPOSTS and laugh at traffic terrors.

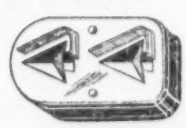
This modern device combines *six* important and necessary accessories in *one* pair of attractive fixtures as follows:

1. FENDER GUIDES
2. DRIVING MIRRORS
3. PARKING LIGHTS
4. SIDE FLOOD LIGHTS
5. TROUBLE LIGHTS
6. SIGNAL LIGHTS

Exclusive with AUTOPOSTS
Convenient Signal Switch mounted on gear shift lever. Affords practically automatic control. Guide lights and ditch light switches within easy reach.

A few dollars invested in AUTOPOSTS will save you thousands in repairs and damages.

SPECIAL OFFER TO FLEET OWNERS!
Let AUTOPOSTS engineers solve your signal problems.



This additional rear unit (in pairs) gives added safety Flashes red with double arrows signalling direction of turn.

Commercial Models list from $15.00 up

(Special de luxe equipment for passenger cars)

GENERAL ACCESSORIES COMPANY, 225 West 57th St., N. Y. C.

DEALERS—Write for attractive proposition

Internal Grinder

The Taylor & Fenn Company is placing on the market a new internal grinder, hydraulically operated and designed for use in short-run work of a variety of types and sizes. The manufacturers claim unusual simplicity, accuracy, convenience and flexibility for this machine.

It is possible to grind straight and taper holes up to eight inches in diameter and eight inches long. The work reciprocates instead of the wheel head, which allows the use of a heavier table with a wider spread of ways and a rigid work head. It is claimed also to simplify application of the motor drive. When grinding the wheel contacts with the back of the hole.

Ball-bearing motors are located in the base. One of these, a five-horsepower unit at 1,200 r. p. m., drives the hydraulic pump and the grinding wheel spindle. The second unit is a one-horsepower job, 900 r. p. m., drivin gthe work head spindle. The motors are easily accessible for adjustment and repairs.

The table carrying the work head is reciprocated hydraulically, together with the grinding wheel screw feed. The hydraulic system is of the low-pressure type, embodying a gear pump with relief valve, a throttle and reverse valve. Table speeds range up to 44 feet per minute. These speeds are obtained through the throttle valve, admitting oil under pressure to a piston type reverse valve regulated by adjustable table dogs. The power feed is automatic by means of the hydraulic reverse valve, but hand feed may be had, either slow or rapid, as desired.

Coolant for the work and grinding wheel is supplied automatically from a portable tank, equipped with a centrifugal pump driven by a separate motor.

The table travels on a wide pressure lubricated flat and V-way. It is self-aligning and self adjusting. The hydraulic piston rod by which it is resiprocated is attached at approximately the center of gravity of the unit made up of the table, work head and work head motor.

Automatic table traverse is controlled by four adjustable dogs, two of which are used in grinding operations, one for the wheel truing position and one as an automotic cut-off and safety stop. The table may be reversed by hand at any point in its travel.

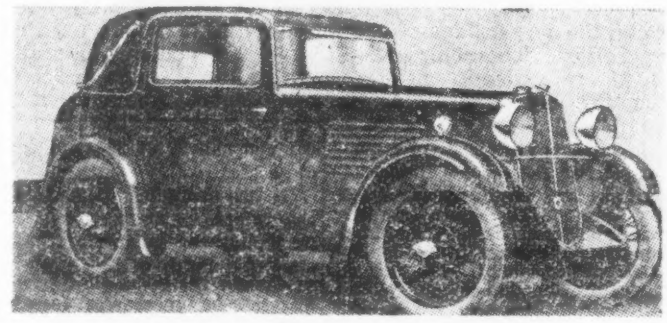
The work head may be swiveled fifteen degrees for taper grinding. The spindle is carried in ball bearings, constantly lubricated by a pump functioning automatically. The pulley on the spindle gives speeds of 275 and 760 r. p. m. This pulley is supported by a bracket attached to the inside of the work head, a method designed to elminate belt pull on the spindle. In idling the pulley revolves on a double row ball bearing.

The one-horse-power motor that drives the work-head spindle is carried on a bracket attached to the bottom side of the work head. A single lever controls starting and stopping of the work, engaging and disengaging the clutch assembled in the spindle pulley. This lever also controls automtically the flow of the coolant.

The cross-slide unit carrying the grinding wheel, jack shaft and belt tightner is mounted on V and flat ways. It is carried on a bridge attached to the base. Power cross feed is hydraulically operated through a lever and bell crank. The lever actuates a double pawl and ratchet, feeding the wheel slide at each end of the table travel. Either pawl may be disengaged to permit feeding at one end only of the table stroke. A rapid movement of the cross slide is also provided.

Naked, quill and sleeve type ball bearing wheel heads may be had. A wheel-truing device is provided to permit rapid adjustment for all diameter wheels and grinding positions. A micrometer adjustment is provided to insure accuracy. The maximum swing of the table is 16 inches, and table travel has a maximum of 20 inches.

B. S. A. (BRITISH) PUTS OUT 93-INCH FRONT WHEEL DRIVE



One of the newest offering by the British Motor industry is a B. S. A., front wheel drive small car, with four-cylinder engine developing nine horsepower. This little car embodies a number of interesting features of design. The engine is a conventional L-head type, coupled directly to a transmission assembly consisting of a clutch, gearbox and final drive.

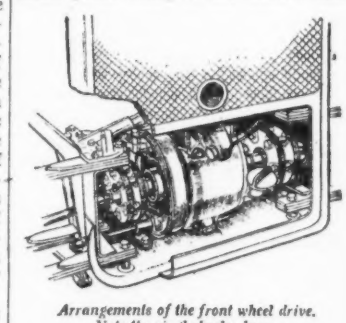
The frame consists of two channel members braced amidships by cross members and at the front by a special double bracket in addition to a tubular cross member of large diameter. A special box girder formation at the fore part is necessary, owing to the incorporation of a special suspension adapted to the front wheel drive. This suspension consists of eight quarter elliptic springs, lying transversely to the longitudinal axes, the butt ends of which are bolted to the box structure. The extremities of the springs carry the wheel hubs, the action of the suspension being suitably dampened to avoid excessive motion when the car is traveling fast on very rough road surfaces.

At the rear semi-elliptic springs are outrigged from the frame, so that the springs themselves lie very close to the wheels. This is designed to give car stability. The wheel base of the car is ninety-three inches and the tread is forty-eight inches.

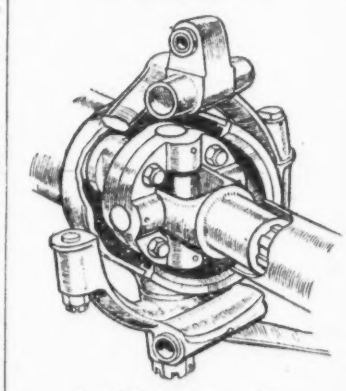
To give rigidity, the cylinder bloc and crank case are formed in a single unit, the sump flange being located some distance below the center line of the crank shaft. The crank shaft is mounted at its forward end in a large diameter ball bearing and at the rear in a roller bearing.

The locations adopted for the auxiliaries follow normal practice; thus, the dynamo and ignition distributor are on the off side of the unit, and are driven, in company with the cam shaft, by a duplex roller chain. The inlet and exhaust manifolds are on the opposite side, together with an A. C. fuel pump and a self-starting carbureter. The sparking plugs are, of course, installed in the cylinder h ad.

A single casting forms the housing for the clutch, gearbox and final drive mechanism; it is attached by a flange mounting on to the front of the cylinder crankcase casting, and, being well ribbed, is of extremely stiff formation. The clutch itself is of the multi-plate type, having two light alloy discs, with cork inserts running in oil, whilst the gearbox provides three forward speeds and reverse, the constant mesh gears being of the double helical variety. The ratios provided are 5.2, 9.4 and 18.6 to 1 for the forward gears and 23.3 to 1 for the reverse.



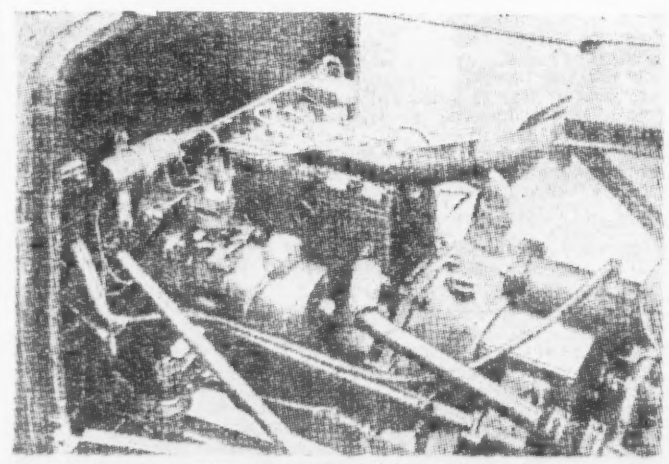
Arrangements of the front wheel drive. Note the single brake drum.



Front hub in part section showing universal joint

The clutch and gear controls are of more than ordinary interest. Actually, the clutch pedal has to operate the clutch proper at some distance from its anchorage; to this end a steel tube connects the pedal with an adjustable push-rod operat-

(Continued on Page 12)



THE FOUR-CYLINDER ENGINE, clutch housing and gearbox; the whole unit is reversed, end for end, as compared with a rear-drive car

Retail Salesmen—This Is Your Page

This department is devoted to the interests of the retail sales division of the industry. Salesmen, this is your department. Automotive Daily News wants you to get something from this department that will help you in your work on the firing line. It wants you to pass on your own experiences, successes, failures to help your brother salesmen. Send in your story in the form of a letter, or even a postal card, and let us get it ready for publication. Your achievement or your mistake may help another salesman to make sales or avoid errors that cost you commissions.

Dealers read this page. Give us the benefit of your reactions on these problems that affect the work of your salesmen, the men on the firing line, the men who bring home the bacon or don't.

BIG TRUCK FLEET OPERATORS FIND COMPANY SCHOOLS BEST IN TRAINING DRIVER - SALESMEN

Company schools for the training of driver-salesmen are in use by a number of companies in the ice, milk, meat packing and laundry industries, operating big truck fleets. Some of these are schools in every sense of the word, with full-time instructors, formal programs, study and recitation periods, and periodic or final examinations. Others are quite informal, and usually are conducted by some executive of the company, in addition to his regular duties.

Some run for a limited period, some operate continuously, and others are conducted at irregular intervals as the company may deem expedient. Many confine their work to the training of new men; others include the experienced men. Classes, as a rule, range in size from ten to forty men. Three cases have been selected as examples of the various types of company schools.

(1) A SHORT SCHOOL FOR NEW MEN

The first of these illustrates the formal, well organized and well equipped school, providing intensive training for new men. It is maintained by a company in the East and is conducted as follows:

"The new man is first given a three-day trial on a route, under the supervision of a foreman. During this trial period he is expected to report on time, to assist in servicing the truck, to help in loading, to aid in serving, and to observe the conditions and the requirements of the route.

"He is next sent to the Route Salesmen's Training School for a four-day period of training. This school, which has been operating for five years, is in charge of a full-time instructor and runs continuously in four-day sessions. It occupies a large room equipped with an instructor's desk, bookcases, demonstration tables, a large portable blackboard, a series of wall charts, a projector with several reels of film, a full size, fully equipped truck and tables and chairs for the men. The classes fluctuate with the seasons, ranging from ten to twenty men each.

"As the basis for our course of instruction we use our Manual of Instruction for Route Salesmen, prepared by us out of the accumulated experiences of our route salesmen, foremen and operating officials. The manual is a loose-leaf, pocket-size book, divided into four sections:

SECTION I.—PRODUCTS

"This section describes the products in detail, their qualities, similarities and differences, composition, production, grading, methods of handling and uses.

SECTION II.—SERVICE

"This section describes, in detail, the duties of the route salesmen, beginning with his arrival at the plant in the morning and ending with his leaving the plant at night. It also outlines the procedure to follow after unusual occurrences, such as accidents.

SECTION III. — RECORDS AND COLLECTIONS

"This section describes, in detail, the records to be kept and the procedure to be followed in keeping them. It details the credit and collection policies of the company; the opening, charging, canceling, transferring, dropping charges from, summarizing and balancing of the route book, and illustrates the steps with twenty-nine full page exhibits of forms.

SECTION IV.—SALESMANSHIP

"This section describes the standards of salesmanship developed by the company, the types of prospective customers, the stages of solicitation, competition leads and qualifications which the company requires of its route salesmen."

(2) A short School for Experienced Men.

The school described below differs materially from the first. It illustrates the type of formal evening school providing intensive training for experienced men for a limited time. It also differs from the school just described in that it is conducted by members of the sales staff. This is the type of school frequently adopted by companies wishing to increase the producing powers of their older men.

In this case the company commenced the training of its route salesmen early in 1930 with a program of bi-weekly meetings. Later, it became convinced that the men needed more thorough training than was provided by the bi-weekly meetings, so a ten-weeks' evening sales school was added in 1931. Describing this school, the sales manager said:

"Our drivers are a peculiar type of men—mostly of German extraction, thrifty, intelligent, hard working and property owners—who have been in the business from ten to thirty years and are thoroughly accustomed to selling in the old way, that is—chiefly through the establishment of a warm personal friendship with the dealer. Because of this relationship—and our own lack of a definite policy—some of our men, in the past, have taken 50 per cent. of their customers with them on leaving our employ.

"Up to 1930 our men had not been given specific training. Then we began with bi-weekly meetings. As soon as the men came in from their routes we gave them coffee and refreshments. We began the meetings promptly at 7, and made attendance compulsory. Usually, the advertising manager opened the session by outlining the sales program for the coming two weeks; the sales manager in charge of the routemen gave them instructions for carrying out the program, and I usually

(Continued on Page 11)

A Salesman's Calendar for July

F. L. Wiethoff, sales manager for Rockne, just before the present month started sent to his dealers a calendar with an appropriate reminder for each day of the month. We are reproducing this as many of the suggestions have just as much value in August or March or any other month.

The importance of planning any sales campaign cannot be overestimated. Even though the plan does not embody everything that will have to be done, though it does not meet all emergencies, it is a foundation on which to build. Salesmen can profitably use this idea of planning certain fundamental operations for a month or at least a week ahead.

Mr. Wiethoff's calendar follows:

1st—Use telephone and personal calls to get service into your shop. Suggest to customers the desirability of having their cars in good condition for the holiday.

2d—Hold used car sale. Many people will want a good used car for July Fourth.

3d (Sunday).

4th (Holiday)—Have demonstrator or cars at public events, such as parades, local clubs, beaches, public picnic grounds, etc.

5th—Devote the day to calling on filling station employees, showing them the car and gaining their friendship. Many prospects can be secured through this source.

6th—Have demonstrator or cars at factory at noon hour.

7th—Demonstrate the Rockne to your local newspaper editors. They will be pleased and will give you good publicity.

8th—Display a "special" as a used car leader.

(Continued on Page 12)

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$12 a Year

260 Issues

AUTOMOTIVE DAILY NEWS
1926 Broadway
New York City, N. Y.

You may enter my subscription for one year. Send the bill.

Name .....
Company .....
Street No. .....
City .....

Bigger and Bigger

grows Studebaker's share of total sales!

STUDEBAKER dealers are getting a larger share of the total available business than at any time in the past ten years.

There's no "trick explanation" to this. It's simply a fact, which can't be ignored. It affects you, no matter what car you're handling—no matter what price class you're covering.

Out of every thousand cars sold, more are sold by Studebaker dealers than at any time since 1922.

Studebaker alone can't put business back where it was in 1928—nor can any other one organization. But Studebaker can, and will, help you get *more* of what business there is!

It's today's business you've got to live on—not yesterday's. Old leaders have slipped. New line-ups are with us. Mere flash or bygone glory won't sell cars for you.

But 80 years of straight forward progress, enhanced by World Champion performance, will help plenty.

Why don't you give it a chance? Write or wire Studebaker today — you'll enjoy the *difference* of dealing with "America's Friendliest Factory."

Studebaker

Cutting Costs in Fleet Operation

(Continued from Page 6)

motor cars and in making parts and special tools and equipment. So, today the majority of us think in terms of specialized service. We are demanding and getting better service in most of the things that need repairing or reconditioning. However, there is one highly important and essential item that has had far too little attention given to it, and that is the reconditioning of the valves.

We know that the valve face and valve stem must be square and central with each other. So must the valve seat and the valve stem guide. But never since the advent of the poppet-valve engine has there been heretofore, until last year, a tool that would bring back that true condition, much less show the mechanic how true or untrue the seat and guide might be.

The procedure of grinding valves is the same everywhere. See that the valve and the seat form a seal. One of the earliest methods of bringing back the valve seat to mate the valve was to grind with abraisive between the two faces until a groove was ground into the valve face, then to take a cut off the valve to remove the groove and start all over again and to report the process until the desired results were obtained.

Summing up, as to manufacture, cannot the manufacturer be induced to install heat-treated valves and seats, such as Stellite, etc., and can he not make a better design of water circulation around valve seats for more complete and more uniform cooling, following that course with more complete data and instruction to service stations and to fleet owners regarding proper servicing of valves and seats and width of seat proper for that particular vehicle?

Efficiency can be raised fully 25 per cent. with attendant economies in operation and greater satisfaction to users of the vehicles if those points can be placed before the manufacturer in such manner as will cause him to act on them. Periods at which valves must be serviced, on a mileage basis can thus be widened as much as 60 per cent., and with even less ill effect on valves and seats than is at present prevalent.

STICKING INTAKE VALVE

1. (a) Insufficient stem clearance. Clearance not less than .0015 for ¼ to ⅜ diameter and .002 for stem diameter of ½.

(b) Weak Springs. Test springs. Mfg. Spec. 27-32 No. 75 should have it.

(c) Gum content in fuel.

2. Exhaust valves.

	Stem Diameter		
Insufficient stem clearance	¼"	⅜"	½"
L type	.002	.0025	.003
Overhead	.003	.0035	.004

3. Carbon on stem, cause of exhaust valve sticking and is usually due to the fact that the temp' of the valve stem just inside the guide at the valve head end, is that at which carbon is formed. Effective remedies, ream, drill, or counter bore the valve guide at the valve head to a clearance of .015 for a depth equal to the lift of the valve.

RADIATORS

The most important points reported for consideration of radiators for motor vehicles are cooling surface, circulation, corrosion, protection, splitting of seams caused by vibration, repair facilities and labor of removing and installing.

If there is not sufficient air surface to draw the heat the water will circulate back too hot to the engine again, and therefore not draw the proper amount of heat from the cylinders. This feature has caused many radiators to fail. The next important point in cooling is free circulation. If the tubes are twisted or bent, the water cannot flow freely and will then deposit sediment which soon forms a scale and clogs the water passage. The straight line water tube overcomes this difficulty even though there is a neglect to clean the radiator ever so often.

Corrosion is the worst enemy of the radiator. It is not overcome by the use of copper, as many have been led to believe, nor is the life of the radiator prolonged by the use of copper. In rolling metal as thin as needed for radiators, the metal, whether copper or brass, becomes porous. Unless the metal is covered with a coating, alkali will attack these pin holes and eat the metal, thereby causing the radiator to leak. Some manufacturers have overcome this difficulty by tinning their radiator cores inside and out.

A brass radiator tinned is probably the best constructed radiator built, in that the bes' bond is obtained between these two metals. The brass and solder have a great affinity for each other and unite so strongly that the vibration troubles are easily overcome; whereas, the copper and solder only paste together, do not unite, and the strength is not obtained. Any radiator properly designed will give the fleet operator the least trouble and expense.

CORRECTING SPRING TROUBLES

Fleet operators feel that they are in some instances responsible for high spring maintenance, but the manufacturer is responsible for a great deal. The operators charge themselves with spring breakage, due to overload, looseness, lack of lubrication, shackle neglect, axle out of alignment and center bolt broken. The manufacturers are responsible for not allowing a greater factor of safety, based on the rated capacity of the vehicle; for example, springs that are too flexible, light spring shackles, no provision for lubrication, not providing auxiliary full-load springs, too rapid "set" of the spring and early failures due to the fatigue of the materials used that result in breakage. Consideration of spring maintenance costs clearly shows that a considerable amount of research is needed.

(To be continued)

MINNESOTA TRUCKS NEED IOWA LICENSE

Des Moines, Ia., July 28.—Minnesota truckers, operating in Iowa, will be obliged to procure Iowa plates in addition to Minnesota numeral markers, beginning today. That was the decision of William A. Stevens, superintendent of the State Motor Vehicle Department. While denied, act is seen as retaliation for Minnesota action requiring Iowa-owned vehicles to carry Minnesota plates while operating in that state. Iowa will reap benefit, as there are five times as many Minnesota vehicles trucking in Iowa as there are Iowa trucks in Minnesota.

Performance Counts!

BROCKWAY TRUCKS represent twenty-three years of successful production and service—designed to serve over a long period of time, economically—built to assure our future success. Thousands of BROCKWAY TRUCKS are substantiating our claims by actual performance.

Brockway Motor Truck Corporation

Main Office and Factory

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The sturdy dependability of Wisconsin Axles reflects the character of the men and methods that build them—engineering ability and high production standards — outwardly expressed as performance.

WISCONSIN AXLE CO.
Oshkosh, Wisconsin

Cumulative New Commercial Car Registration Statistics, June, 1932

Returns for today: Alabama, Arizona, California, Kentucky, Louisiana, Massachusetts, Nevada, New Jersey, Oklahoma, Pennsylvania and Washington

Figures in this table are from R. L. Polk & Co. of Detroit, with the exception of Illinois, which are supplied by the Robinson Advertising Service, Springfield, Ill., and New Jersey, which are furnished by the New Jersey Motor List Co., New Car Division, Trenton, N. J. Metropolitan district figures compiled by Sherlock & Arnold are included in New York state total. Readers desiring county, city or town lists, or lists of owners in any given section, may obtain these by addressing any of these three companies. Some of th's data has been published previously, but it is given here complete for the convenience of our subscribers.
In this table, 40 states and the District of Columbia. **Commercial car figures do not include busses.**

States	Autocar	Brockway	Chevrolet	Diamond-T	Dodge	Federal	Ford	G. M. C.	Indiana	International	La France Republic	Mack	Pierce-Arrow	Reo	Sterling	Stewart	Studebaker	White	Willys-Overland	Miscellaneous	Totals	States
Alabama			67		3		33	7		9							1			2	122	Alabama
Arizona			15		2		29	1		5							3				55	Arizona
Arkansas			30				29	1		4				1							65	Arkansas
California	2		309	3	63	9	614	34	8	48		5		34	3	4	28	4	2	85	1255	California
Connecticut	3	2	106	2	18	1	121	15	1	21	1	3	2	8		1	6	3	1	5	320	Connecticut
Delaware			35		3		24	4	1	5				2			2			2	78	Delaware
Florida			58		3		97	1	1	11				1			2	3	1	11	189	Florida
Idaho			17		3		24	1		2								1		1	49	Idaho
Illinois	10		174	29	25	2	167	15	1	64				9	1		12	4	3	11	527	Illinois
Indiana	1		141	8	21	2	96	20	6	54				9		1	7		3	7	376	Indiana
Iowa			157	6	15		166	10	2	49				7			6	1		4	423	Iowa
Kansas			130	5	12		144	11		40				2	1		3		8	3	359	Kansas
Kentucky			92	4	9	10	110	8	4	33		1		6			25		2	1	305	Kentucky
Louisiana			62	3	2		78	7	1	16				2			1	1			173	Louisiana
Maryland	16	6	119	3	32	3	117	19	3	37	2	11		10		3	3	2	1	6	393	Maryland
Mass'setts	11	3	178	7	43	4	357	46	5	53		11		29	2	9	6	9	2	9	784	Mass'setts
Michigan			178		35	12	434	12	1	32	1	1		14			7	5	2	6	740	Michigan
Minnesota			176	14	21	5	220	6	2	57	1			6			8	2	5	3	526	Minnesota
Missouri	2		217	8	20	4	251	20	3	74		7		5			3	5	1	9	629	Missouri
Montana			8		1		22			16							1		1		49	Montana
Nebraska			49	4	4	1	65	10		26		1		2					4	1	167	Nebraska
Nevada			9				16	2		2										2	31	Nevada, 31
New H'pshire		1	31	3		1	56	5						2			1		1	3	104	New H'pshire
New Jersey	11	8	244	13	45	6	253	45	4	75		16		19	1	3	6	11	3	22	785	New Jersey
N. Mexico			19		1		39			8							1				68	N. Mexico
North Car.			124	1	9		127	9		10		2		3						1	286	North Car.
North Dakota			30	2	3		35			23										1	94	North Dak.
Ohio	3		218	8	47	4	375	43	21	80		16		18		4	15	21	10	91	974	Ohio
Oklahoma			89		5		77	4		15										6	196	Oklahoma
Oregon			51		13	3	121	12	3	17	1			3	6		4	2			236	Oregon
Pennsylvania	18	20	446	15	146	4	615	61	15	134		28		34	4	23	20	20	19	36	1658	Pennsyl. '31
Rhode Island	2		37		5	8	59	18		7				8						3	147	Rhode Island
So. Carolina			40	2	1		42	2		5		1					2			1	96	S. Carolina
South Dakota			25		6		11			18		1								1	62	S'th Dakota
Utah			19		2		18	5		7				2			1				54	Utah
Vermont	2		30	2	8		62	3	2	20		1		6		1	2		6		145	Vermont
Virginia	2		147	2	8		143	8	4	29	1	1		2				3	1		351	Virginia
Wasahington			52	1	9	2	80	1		23		1		6			5	2		8	190	Washington
W. Virginia			55		12		72	2	4	17				2			1		1	4	170	W. Virginia
Wisconsin			273	27	37	6	261	18	4	58				14		1	8	1	10	14	732	Wisconsin
Dist. of Col.	1		38	4	9		41	2		14		3						1		2	115	Dist. of Col.
Total	84	40	4295	176	701	87	5701	488	96	1218	7	110	2	266	18	50	190	101	87	361	14078	Totals

Major Specifications and Mechanical Details of 1932 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Cam-shaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
Austin	400	475	Own	L	4	2.2x3	45.6	7.8	13@3000	G	Hex	Rock	Spic	Own	Til	Gra	Aut	W-G	3	Sal	Sp	5.25	O4M	76.5	75	1210	18x3.75	18x3.75
Autocar B	1½	2250	Own	L	6	3¾x4¾	314.0	33.7	75@2400	G	G & O	Br-L	Spic	Ross	Str	P	DR	Br-L	4	Own	Sp	33.4	4IH	388	*159	5350	20x7.00	20x7.00D
Autocar D	2-2½	3500	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	Per	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2R	33.5	LO4IDV*	460	150	5600	20x8.25	20x8.25D
Autocar A	1½-2	3200	Own	L	6	4 x4¾	358.0	38.4	82@2400	G	G & O	Long	Spic	Ross	Str	P	DR	Own	5	Own	Sp	29.7	LO4IDV*	460	150	5400	20x8.25	20x8.25
†Autocar SH	2½-3	4300	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2R	44.0	O2IM-T	328	114	6770	34x7	34x7D
†Autocar H	2½-3	4100	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2R	48.6	O2IM	328	114	6770	34x7	34x7D
†Autocar HS	3-3½	4600	Own	L	4	4½x5½	350.0	32.4	45@1450	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2R	54.3	O2IM	516	114	7600	40x8	40x8D
†Autocar SHS	3-3½	4800	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Gra	DR	Own	4	Own	2R	54.3	O2IM-T	516	114	8100	40x8	40x8D
Autocar N	3-3½	4600	Own	L	6	4¼x4¾	404.0	43.4	92@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2R	41.2	OL4IHV-T	574	174	7990	20x9.75	20x9.75D
Autocar TFA	3½-5	6100	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	12	Own	2R	101.3	LO4IDV	602	192	9300	20x10.50	20x10.50D
Autocar C	3½-5	5900	Own	L	6	4½x4¾	453.0	48.6	101@2400	G	Own	Long	Spic	Ross	Str	Vac	DR	Own	4	Own	2R	51.7	O4IMV-T	516	172	9500	24x10.50	24x10.50D
Autocar FE	7½	11000	Ster	L	6	5¼x6	780.0	66.2	156@1800	G	G & O	Br-L	Spic	Ross	Zen	P	NE	Br-L	12	Wis	2R	89.2	W4IA-T	674	180	12300	24x10.50	24x10.50D
*Autocar GE	10	12500	Ster	L	6	5¼x6	780.0	66.2	156@1800	G	G & O	Br-L	Spic	Ross	Zen	P	NE	Br-L	12	Tim	Wo	82.2	W6IA-T	720	198	16300	20x9.75	20x9.75D
Brockway 80 C	* 9500	1215	Con	L	6	3⅞x4	214.7	27.3	71@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	36.2	CB4IM	248	149	4075	20x6.00	20x6.00D
Brockway 90 C	*11500	1525	Con	L	6	3⅞x4⅝	248.2	27.3	70@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	37.4	L4IH	353	149	4355	20x6.50	20x6.50D
Brockway 92 C	*12500	1800	Con	L	6	3⅞x4⅝	248.2	27.3	70@3200	C	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Tim	Sp	37.4	L4IH	353	149	4450	32x6	32x6D
Brockway 120 C	*15000	1990	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Tim	Sp	38.5	L4IH	353	156	5500	32x6	32x6D
Brockway 140 C	*17500	2495	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	43.5	L4IHV	386	156	6100	32x8	32x8D
Brockway 141 C	*19500	2935	Con	H	6	4 x4⅛	311.0	38.4	73@2400	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	46.2	L4IHV	380	170	6500	32x6	32x6D
Brockway 170 C	*19500	3180	Con	H	6	4⅛x4¾	380.9	40.8	89@2200	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	46.6	L4IHV	380	170	7100	32x6	32x6D
Brockway 175 C	*19500	3660	Con	H	6	4⅜x4¾	427.5	45.9	100@2200	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Ful	5	Wis	2R	46.6	L4IHV	380	170	7200	34x7	34x7D
Brockway 195 C	*22000	3820	Con	H	6	4⅛x4¾	380.9	40.8	89@2200	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	52.4	L4IHV	471	170	8100	34x7	34x7D
Brockway 220 C	*25000	4560	Con	H	6	4⅜x4¾	427.5	45.9	100@2200	C	G & O	Br-L	Spic	Ross	Zen	P	*Aut	Br-L	4	Wis	2R	50.7	L4IHV	546	170	8675	36x8	36x8D
Brockway 260 C	*28000	5850	Con	H	6	4½x5½	501.0	48.6	120@2200	C	G & O	Ful	Spic	Ross	Zen	P	*Aut	Ful	4	Wis	2R	50.7	L4IHV	546	212	9000	22x10.50	22x10.50D
Chevrolet	½	345	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	3	Own	Sp	13.6	O4IM	101	109	*1880	19x4.75	19x4.75
Chevrolet	1½	520	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	——	—	131	2700	30x5	32x6
Chevrolet	1½	575	Own	H	6	3⅛x3¾	194.0	26.3	50@2600	G	Har	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	33.4	O4IM	170	157	3015	30x5	30x5D
Diamond T 210	1½	595	Her	L	6	3⅜x4¼	228.	27.3	60@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	—	L4IH	196	135½	3100	20x5.50B	20x6.50B
Diamond T 240 A	1¾	795	Her	L	6	3⅜x4¼	228.	27.3	60@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	—	L4IH	219	137	3400	20x6.00B	32x6P
Diamond T 310	2	995	Her	L	6	3⅝x4¼	263.	31.5	65@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	W-G	4	Cla	Sp	—	L4IH	350	155	4200	20x6.50B	20x6.50DB
Diamond T 410	3	1595	Her	L	6	3⅝x4½	298.	33.7	68@2400	G	G & O	Borg	Spic	Ross	Zen	P	Aut	Cov	4	Cla	Sp	—	L4IHV	350	160¾	5400	20x7.50B	20x7.50DB
Diamond T 510	4	1995	Her	L	6	4 x4½	339.	38.4	75@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Tim	Sp	—	L4IHV	408	168	6000	20x7.00B	25x8.25DB
Diamond T 303 F B	2-2½	2425	Her	L	6	4 x4½	339.0	38.4	75@2400	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	4	Cla	Sp	—	L4IHV	408	199	6100	20x7.50	20x7.50DB
Diamond T 504 A	3	2650	Her	L	6	4 x4½	339.0	38.4	75@2400	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	4	Wis	2 R	—	L4IHV-T	408	176½	6400	20x8.25B	20x8.25DB
Diamond T 506 A	3	2950	Her	L	6	4¼x4½	383.0	43.3	91@2500	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	5	Wis	2 R	—	L4IHV-T	408	184	6400	20x8.25B	20x8.25DB
Diamond T 603	3-4	3395	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	—	L4IHV-T	499	169	7500	20x9.00B	20x9.00DB
Diamond T 606 B	3-4	3695	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	G & O	Cov	Spic	Ross	Zen	P	L-N	Cov	5	Wis	2 R	—	L4IHV-T	499	187½	7500	20x9.00B	20x9.00DB
Diamond T 750	4-5	4925	Her	L	6	4½x5¼	529.0	51.4	114@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Cov	5	Wis	2 R	—	W4IA	552	178	9300	22x9.75B	22x9.75DB
*Diamond T 801	4	4140	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	G & O	Cov	Spic	Ross	Zen	P	Aut	Br-L	7	Own	Wo	—	L6IHV-T	571	189½	8300	26x8P	26x8P
*Diamond T 1201	6	5600	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	G & O	Cov	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	—	W4IA-T	238	190	11000	34x7P	34x7DP
*Diamond T 1602	8	6400	Her	L	6	4⅝x5¼	529.0	51.3	114@2200	G	G & O	Cov	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	—	W4IA-T	238	190	11700	36x8P	36x8DP
*Diamond T 1603	8	7500	Wak	L	6	5 x5¾	677.4	60.0	125@2000	G	G & O	Br-L	SpicBlo	Ross	Zen	P	Aut	Br-L	7	Tim	Wo	—	W4IA-T	238	194	12500	36x8P	36x8D
Dodge Bros. UF 10	½	375	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Un	Own	Car	P	DR	Own	3	Own	Sp	12.8	O4IH	121	109	1925	19x5.00	19x5.00
Dodge Bros. F 10	½	445	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Un	Own	Car	P	DR	Own	3	Own	Sp	12.8	O4IH	121	109	1975	19x5.25	19x5.25
Dodge Bros. G 20	¾-1	597	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	58.1	——	175.8	131	2520	17x7.50	17x7.50
Dodge Bros. G 21	¾-1	622	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	58.1	——	175.8	157	2670	17x7.50	17x7.50
Dodge Bros. UG 20	¾-1	537	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	58.1	——	175.8	131	2450	17x7.50	17x7.50
Dodge Bros. UG 21	¾-1	562	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Own	Own	Own	Car	P	DR	Own	4	Own	Sp	58.1	——	175.8	157	2600	17x7.50	17x7.50
Dodge Bros.	1	595	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Spic	Han	Zen	P	DR	Own	4	Own	Sp	33.4	O4IH	208	133	2690	20x6.00	32x6
Dodge Bros. UG 30	1½	525	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	36.1	O4IH	176	131	2490	20x6.00	32x6
Dodge Bros. UG 31	1½	550	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	36.1	O4IH	176	157	2640	20x6.00	36x6
Dodge Bros. G 30	1½	585	Own	L	6	3¼x4¼	211.5	25.3	66@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	36.1	4HI	176	131	2560	20x6.00	32x6
Dodge Bros. UF 30	1½	595	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	5	Own	Sp	37.1	O4IH	187	136	2581	20x6.00	32x6
Dodge Bros. G 31	1½	610	Own	L	6	3¼x4¼	211.5	25.3	66@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	4HI	176	157	2710	20x6.00	32x6
Dodge Bros. UF 31	1½	670	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	229	165	2757	20x6.00	32x6
Dodge Bros. F 30	1½	695	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	—	—	4	Own	Sp	37.1	O4IH	187	136	2631	20x6.00	32x6
Dodge Bros. F 31	1½	770	Own	L	6	3¼x4¼	211.5	25.3	66@3200	C	Fed	Borg	Cle	W-G	Car	P	DR	Own	4	Own	Sp	37.1	O4IH	229	165	2807	20x6.00	32x6
*Dodge Bros. UGS 50	1½-3	875	Own	L	4	3⅝x4¾	196.0	21.0	48@2800	G	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IHV	176	153	3575	20x6.00	32x6S
*Dodge Bros. GS 50	1½-3	935	Own	L	6	3¼x4¼	211.5	25.3	66@3100	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	36.1	O4IHV	176	153	3650	20x6.00	32x6S
Dodge Bros. F 35	1½	1425	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O4IH	305	140	3760	20x6.00	20x6.00D
Dodge Bros. F 36	1½	1485	Own	L	6	3⅜x3⅞	208.0	27.3	63@3200	C	Fed	Borg	Cle	Han	Zen	P	DR	Own	4	Own	Sp	41.4	O4IH	305	165	3972	20x6.00	20x6.00D
Dodge Bros. G 43	2	795	Own	L	6	3¼x4⅝	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	50.9	4HI	229	136	3345	20x7.00	20x7.00D
Dodge Bros. G 44	2	825	Own	L	6	3¼x4⅝	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	4	Own	Sp	50.9	4HI	229	165	3470	20x7.00	20x7.00D
*Dodge Bros. F 40	2	1995	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH-T	350	150	5173	20x6.50	20x6.50D
*Dodge Bros. F 41	2	2095	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	43.7	O4IH-T	350	165	5211	20x6.50	20x6.50D
*Dodge Bros. F 42	2	2180	Own	L	6	3⅝x5	309.6	31.5	75@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	50.0	O4IH-T	229	190	5311	20x6.50	20x6.50D
Dodge Bros. GS 55	2-4	1260	Own	L	6	3¼x4⅜	217.7	25.3	73@3200	C	Fed	Borg	Cle	Own	Car	P	DR	Own	5	Own	Sp	50.9	O4IHV	365	158	4450	20x7.00	20x7.00D
Dodge Bros.	3	1565	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Long	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	165	4520	32x6	32x6D
Dodge Bros.	3	1615	Own	L	6	3⅜x4½	241.0	27.3	78@3000	C	Fed	Borg	Un	Han	Zen	Vac	NE	Own	4	Own	Sp	46.3	O4IH	382	185	4715	32x6	32x6D
Dodge Bros. F 60	3	2645	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	2 R	56.6	O4IH-T	416	146	5543	32x6	32x6D
*Dodge Bros. F 61	3	2575	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	O4IH-T	416	170	5789	32x6	32x6D
*Dodge Bros. F 62	3	2695	Own	L	6	3⅝x5	309.6	31.5	96@3000	G	Long	Borg	Cle	Sag	DL	P	DR	Own	4	Own	Sp	48.8	O4IH-T	416	195	5901	32x6	32x6D
Dodge Bros. G 80	4	5250	Own	L	8	3½x5	384.8	39.2	120@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	62.7	B4IA-T	650	146	7640	20x9.75	20x9.75D
Dodge Bros. G 81	4	5285	Own	L	8	3½x5	384.8	39.2	120@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B4IA-T	650	170	7840	20x9.75	20x9.75D
Dodge Bros. G 82	4	5350	Own	L	8	3½x5	384.8	39.2	120@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B4IA-T	650	195	8040	20x9.75	20x9.75D
Dodge Bros. G 83	4	5415	Own	L	8	3½x5	384.8	39.2	120@3000	G	Long	Borg	Cle	Sag	Str	P	DR	Own	5	Own	Sp	69.6	B4IA-T	650	220	8400	20x9.75	20x9.75D
Essex Com.	¾	435	Own	L	6	2¾x4½	163.0	18.2	55@3300	C	Har	Own	Spic	Gem	Mar	Vac	Aut	Own	3	Own	Sp	5.40	4M	147	110½	1970	20x5	20x5.50
Federal D 3	*1½	670	Con	L	4	3⅞x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	377	130	3225	32x6	32x6
Federal E 3	*1½	695	Con	L	6	3⅜x4	215.0	27.3	72@3400	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L4IH	377	130	3225	32x6	32x6
Federal F 7	*1¾	1325	Con	L	6	3⅞x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	Own	4	Tim	Sp	29.2	L4IH	413	132	3765	30x5	30x5D
Federal F 8	*1¾-2	1425	Con	L	6	3⅞x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Gem	Zen	P	DR	Own	4	Tim	Sp	34.0	L4IH	438	132	3865	30x5	30x5D
Federal G 5	2	995	Con	L	6	3⅜x4	215.0	27.3	72@3400	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Tim	Sp	6.80	L4IH	269	132	3800	20x6.50B	20x6.50DB
Federal A 6	*2	1695	Con	L	6	3⅞x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L4IH	450	151	4580	32x6	32x6D
Federal A 6 T	*2½	1995	Con	L	6	3⅞x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Sp	47.1	L4IHV	659	151	5110	32x6	32x6D
Federal A 6 T W	*2½	2130	Con	L	6	3⅞x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Sp	52.9	L4IHV	659	151	5110	32x6	32x6D
Federal T 8 W	*2½	1595	Wau	L	4	4 x5	251.0	25.6	50@2000	G	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Wo	36.3	L4IH	575	148	5110	32x6	36x8
Federal T 8 W F	*2½	1795	Con	L	6	3⅞x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Tim	Wo	38.8	L4IHV	659	148	5400	32x6	32x6D
*Federal D 2 S W	*2½-3	1050	Con	L	4	3⅞x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	3925	20x6.00	32x6
*Federal E 2 S W	*2½-3	1150	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	145	3975	20x6.00	32x6
*Federal D 2 D	*2½-3	1350	Con	L	4	3⅞x4¼	200.5	24.0	50@2700	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	140	4235	20x6.00	32x6
*Federal E 2 D	*2½-3	1450	Con	L	6	3⅜x4	215.0	27.3	60@2600	C	Long	Borg	Cle	Gem	Zen	P	DR	W-G	4	Cla	Sp	40.8	L6IH	566	145	4310	20x6.00	32x6
Federal T 10 B	*2½-3	2550	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44.5	L4IHV	659	165	6550	34x7	34x7D
Federal T 10 W	*2½-3	2685	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	Sp	44.0	L4IHV	659	165	6550	34x7	34x7D
Federal T 10 D B	*2½-3	2685	Con	H	6	4 x4⅛	311.0	38.4	75@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Own	4	Tim	2R	45.6	L4IHV	659	165	6550	34x7	34x7D
Federal U 6	*3½-4	3860	Con	H	6	4⅛x4¾	381.0	40.8	85@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	64.6	L4IHV	767	165	7420	36x8	36x8D
Federal U 6 D R	*3½-4	3860	Con	H	6	4⅛x4¾	381.0	40.8	85@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2R	69.6	L4IHV	767	165	7420	36x8	36x8D
*Federal A 6 S W	*4	2195	Con	L	6	3⅜x4⅝	248.0	27.3	64@2600	C	Long	Borg	Pet	Ross	Zen	Vac	DR	Own	4	Cla	Sp	38.5	L6IHV	675	164	5620	32x6	32x6D
Federal C 7	*5-6	4485	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Long	Borg	Pet	Han	Zen	P	DR	Br-L	7	Tim	2R	75.2	L4IHV	866	195	9550	20x9.75	20x9.75D
Federal C 7 W	*5-6	4485	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Long	Borg	Pet	Han	Zen	P	DR	Br-L	7	Tim	W	78.0	L4IHV	866	195	9550	20x9.75	20x9.75D
Federal C 8	*5-6	4695	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Long	Borg	Pet	Han	Zen	P	DR	Br-L	7	Tim	2R	75.2	L4IA	921	195	9650	20x9.75	20x9.75D
Federal C 8 W	*5-6	4695	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Long	Borg	Pet	Han	Zen	P	DR	Br-L	7	Tim	Wo	78.0	L4IA	921	195	9650	20x9.75	20x9.75D
Federal X 8	*7½	4335	Con	L	4	5 x6	471.0	40.0	61@1350	G	Long	Borg	Pet	Gem	Zen	Vac	AB	Br-L	7	Tim	Wo	111.0	T21MV	603	162	9750	36x6S	40x14S
Federal X 8 D R	*7½	4335	Con	L	4	5 x6	471.0	40.0	61@1350	G	Long	Borg	Pet	Gem	Zen	Vac	AB	Br-L	7	Tim	2R	106.0	T21MV	603	162	9750	36x6S	40x14S
Federal X 8 R	*7½	4735	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Wo	111.0	T21MV	462	162	10475	40x8	40x8D
Federal X 8 R D R	*7½	4735	Con	H	6	4⅜x4¾	428.4	45.9	100@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	2R	106.0	T21MV	462	162	10475	40x8	40x8D
†Federal T 10 SW	8	3895	Con	H	6	4 x4½	339.0	38.4	80@2200	C	Long	Borg	Pet	Ross	Zen	P	DR	Br-L	7	Tim	Sp	74.1	L6IHV	986	188	9600	34x7	34x7D
Ford	—	320	Own	L	4	3⅞x4¼	200.5	—	50@2800	G	Own	Long	Spic	Gem	Zen	Gra	Own	Own	4	Own	Sp	——	O4IH	186	106	——	20x6.00B	20x6.00DB
Ford	1½	470	Own	L	4	3⅞x4¼	200.5	—	50@2800	G	Own	Long	Spic	Gem	Zen	Gra	Own	Own	4	Own	Sp	——	O4IM	474⅞	131	——	20x6.00B	20x6.00DB
Ford	1½	500	Own	L	4	3⅞x4¼	200.5	—	50@2800	G	Own	Long	Spic	Gem	Zen	Gra	Own	Own	4	Own	Sp	——	O4IM	474⅞	157	——	20x6.00B	20x6.00DB
General Motors T-15	*6500	645	Own	L	6	3⅛x3⅞	200.3	26.3	60@3000	C	Long	Own	Mec	Sag	Mar	P	DR	Own	3	Own	Sp	16.1	B4IM	211	130	2625	20x5.50B	20x5.50B
General Motors T-18	*8200	595	Own	L	6	3⅛x3⅞	200.3	26.3	66@3200	C	Long	Own	Own	Sag	Mar	P	DR	Own	4	Own	Sp	35.7	O4IM	175	131	2785	30x5P	32x6P
General Motors T-25	*9000	1200	Buick	H

Major Specifications and Mechanical Details of 1932 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

(Continued from Page 9)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Rear
Indiana 95 DR	2½	1275	Her	L	6	3¾x4½	282.0	33.7	90@2500	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	41.2	L4IH	353	141	4650	20x7.50	20x7.50DB
Indiana 105	2½	1775	Her	L	6	3¾x4¼	282.0	33.7	90@2500	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	48.3	L4IHV	383	156	5800	20x8.25	20x8.25D
Indiana 17	2½	2450	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	37.8	L4IHV	398	170	7000	20x8.25	20x8.25D
*Indiana 95 SBT 150	3	1675	Her	L	6	3¾x4¼	282.0	33.7	90@2500	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	45.8	6HV	559	168	6500	32x6	32x6DP
*Indiana 95 SW 75	3	1735	Her	L	6	3¾x4¼	282.0	33.7	90@2500	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	45.8	6HV	459	186	6200	32x6	32x6DP
Indiana 17 DR	3	2675	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	38.6	L4IHV	398	170	7300	20x8.25	20x8.25D
Indiana 17 W	2½	2675	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	38.1	L4IHV	398	170	7000	20x8.25	20x8.25D
Indiana 19 DR	3½	3400	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	52.3	L4IHV	489	170	8100	20x9.00	20x9.00D
Indiana 17 SBI 251	4	3250	Her	L	6	4⅜x4¾	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Sp	37.8	L4IHV	625	183	8200	34x7	34x7D
*Indiana 17 SW 251	4	3475	Her	L	6	4⅜x4⅜	428.4	45.9	94@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Tim	Wo	38.1	L4IHV	625	183	8500	34x7	34x7D
Indiana 43 DR	4	4390	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	50.7	L4IHV	546	170	8500	20x9.75	20x9.75D
Indiana 45 DR	5	4800	Her	L	6	4⅝x5¼	529.0	51.3	115@2200	G	Yo	Br-L	Spic	Ross	Str	P	Aut	Br-L	4	Wis	2R	45.4	L4IHV	546	170	8700	20x9.75	20x9.75D
International A 1	¾	615	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	B4IM	212	136	*2887	20x5.50	20x5.50
International A 2	1½	615	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	39.5	B4IM	212	136	2935	20x6.00	20x6.00
International B 2	1½	665	Wak	L	4	3⅝x4½	186.0	21.0	39@2400	G	Mod	Mec	Mec	Ross	Zen	Vac	DR	Mec	6	Own	Sp	47.3	B4IM	212	136	2945	20x6.00	20x6.00
International A L 3	1½	1450	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Own	Mec	Ross	Zen	Vac	DR	W-G	4	Own	Sp	42.9	B4IM	295	138	4032	20x6.00	20x6.00D
International A 3	1½	735	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Rock	Mec	Ross	Zen	P	DR	W-G	4	Own	Sp	33.8	B4IM	287	136	3572	20x6.00	20x6.00
International A 3½	1½	1250	Lyc	L	6	3¼x4½	224.0	25.3	54@2700	G	Mod	Rock	Mec	Ross	Zen	P	DR	W-G	4	Own	Sp	34.9	B4IM	302	136	3600	20x6.00	20x6.00D
International A 4	2	1750	Own	H	6	3⅜x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	47.8	B4IM*	378	145	5221	32x6	32x6D
International W 1	2½	3850	Hall	H	4	4¼x5½	312.0	28.9	59@2000	C	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2R	60.5	BO4IM*	710	148	8300	36x8S	36x8S
International A 5	3	2350	Own	H	6	3⅜x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	52.6	B4IM*	430	156	5895	34x7	34x7D
International A 6	3	2675	Own	H	6	3⅜x4½	279.0	31.5	67@2600	G	Mod	Own	Mec	Ross	Zen	Vac	DR	Own	5	Own	Sp	62.5	B4IM*	430	156	6120	34x7	34x7D
International W 3	3½	4850	Hall	H	4	4¾x5½	390.0	36.1	69@2000	C	Own	Own	Own	Zen	Vac	RB	Own	5	Own	2R	70.5	BO4IM*	794	160	10125	36x6S	40x12S
International A 7	5	6290	Own	H	6	4⅛x5½	525.0	48.6	93@1800	G	Mod	Rock	Mec	Ross	Zen	P	DR	Own	5	Own	2R	52.3	BO4IM-T	730	160	11590	20x9.75	20x9.75D
International A 8	5	6300	Own	H	6	5 x5½	650.0	60.0	115@1800	G	Mod	Rock	Mec	Ross	Zen	P	DR	Own	5	Own	2R	52.3	BO4IM-T	730	160	11590	20x9.75	20x9.75D
La France Rep. A 1	* 6000	795	Lyc	L	6	3 x4¾	201.5	21.5	60@2500	G	G&O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	36.1	L4IH	378	132	3000	20x5.50	32x6
La France Rep. C 1	* 7500	1295	Lyc	L	6	3¼x4½	224.0	25.4	61@2750	G	G&O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	35.8	L4IH	413	144	3300	20x6.00	32x6
La France Rep. D 1	* 9000	1595	Lyc	L	6	3¼x4½	224.0	25.4	61@2750	G	G&O	Borg	Spic	Han	Zen	Vac	Aut	Ful	4	Tim	Sp	37.9	L4IH	448	144	3725	30x5	30x5D
La France Rep. C 2	*10000	995	Lyc	L	6	3¼x4½	224.0	25.3	61@2750	G	Per	Borg	Spic	Ross	Zen	P	Aut	Ful	4	Tim	Sp	35.9	L4IH	448	150	3800	20x6.00B	20x6.00DB
La France Rep. D 2	*11500	1295	Lyc	L	6	3⅜x4½	242.0	27.3	65@2800	G	Per	Borg	Spic	Ross	Zen	P	Aut	Ful	4	Tim	Sp	37.9	L4IH	448	162	4600	20x6.50	20x6.50D
La France Rep. E 1	*13000	1985	Bud	L	6	3½x4½	260.0	29.5	69@2600	G	Per	Borg	Spic	Ross	Zen	Vac	Aut	Ful	4	Tim	Sp	47.0	L4IHV	578	162	5000	20x7.50	20x7.50D
La France Rep. F 3	*15000	2485	Lyc	L	6	3¾x4½	299.0	33.7	80@2500	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Tim	Sp	50.6	L4IHV-T	656	174	5625	34x7	34x7D
La France Rep. H 2	*16000	2985	Lyc	L	6	3⅞x5	354.0	36.0	85@2300	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Wis	2R	41.6	L4IHV-T	658	174	6370	34x7	34x7D
La France Rep. H 3	*18000	3395	Bud	L	6	4⅛x4¾	393.0	42.1	94@2400	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Tim	Sp	54.0	L4IHV-T	768	179	7450	20x9.75B	20x9.75DB
La France Rep. M 2	*20000	4000	Wak	L	6	4⅜x5⅛	462.0	46.0	97@2000	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	5	Wis	2R	51.0	L4IHV-T	768	174	7500	36x8	36x8D
La France Rep. M 3	*22000	4750	Wak	L	6	4⅜x5⅛	462.0	46.0	97@2000	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	5	Tim	2R	62.5	L4IHV-T	768	191	8300	20x10.50B	20x10.50DB
La France Rep. 35-2	*24000	5600	Wak	L	6	4½x5¾	549.0	48.6	98@1850	G	Own	Ful	Spic	Ross	Zen	P	Aut	Ful	4	Wis	2R	46.3	L4IHV-T	870	174	9250	38x9	38x9D
La France Rep. 35-3	*28000	6400	Wak	L	6	4⅝x5⅛	517.0	51.0	100@1800	G	Per	Ful	Spic	Ross	Zen	P	Aut	Ful	12	Tim	2R	111.5	W4IA-T	1054	191	10300	24x10.50B	24x10.50DB
La France Rep. Q 4	*30000	10000	Own	H	12	4 x5	754.0	76.7	240@2900	C	Own	Long	Blo	Ross	Zen	P	DR	Br-L	4	Tim	2R	Opt	W4IA-T	1054	Opt	12750	24x10.50B	24x10.50DB
La France Rep. Q 6	*40000	12000	Own	H	12	4 x5	754.0	76.7	240@2900	C	Own	Long	Blo	Ross	Zen	P	DR	Br-L	4	Tim	4R	Opt	W6IA-T	1520	Opt	14900	20x10.50B	20x10.50DB
Mack B G	——	2500	Own	L	6	3¼x5	248.9	25.4	41@2600	G	Own	Own	Spic	Gem	Str	P	NE	Own	4	Tim	Sp	Opt	L4IH	302	148	4200	20x6.00B	20x6.00DB
Mack B L	——	3030	Own	L	6	3⅜x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Sp	Opt	O4IV	427	156	4950	32x6P	32x6DP
Mack B F	——	4200	Own	L	6	3⅜x5	309.6	31.6	75@2500	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	2R	Opt	O4IV	427	156	6600	20x8.25B	20x8.25DB
Mack A B-4	——	4000	Own	L	4	4¼x5	283.7	28.9	63@2100	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6450	34x7P	34x7DP
Mack A B-4	——	4200	Own	L	4	4¼x5	283.7	28.9	63@2100	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2R	Opt	O4IV	471	164½	6850	34x7P	34x7DP
Mack A B-4	——	4150	Own	L	6	3⅜x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	471	146½	6450	34x7P	34x7DP
Mack A B-6	——	4500	Own	L	6	3⅜x5	309.6	31.6	75@2500	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O4IV	471	164½	6850	34x7P	34x7DP
Mack A B-6	——	4700	Own	L	6	4 x5½	414.7	38.4	94@2400	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	2R	Opt	O4IV	427	157	7500	20x9.00B	20x9.00DB
Mack B M	——	5500	Own	L	6	4 x5½	414.7	38.4	94@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	590	154	8000	36x8P	36x8DP
Mack B C	——	5250	Own	L	6	4 x5½	414.7	38.4	94@2400	G	Own	Own	Spic	Own	Str	P	NE	Own	4	Own	2R	Opt	O4IV	610	154	7850	36x8P	36x8DP
Mack B C	——	5750	Own	L	6	4¼x5½	468.1	43.3	104@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	619	160	7900	22x9.75B	22x9.75DB
Mack B X	——	5690	Own	L	6	4¼x5½	468.1	43.3	104@2300	G	Own	Own	Spic	Ross	Str	P	NE	Own	4	Own	2R	Opt	O4IV	619	160	8050	22x9.75B	22x9.75DB
Mack B J	——	6450	Own	L	6	4½x5½	525.5	48.6	125@2300	G	Own	Own	Cle	Han	Str	P	NE	Own	4	Own	2R	Opt	O4IV	618	197	9800	22x10.50B	22x10.50DB
Mack B Q	——	6800	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Cle	Ross	Str	P	NE	Own	4	Own	2R	Opt	O4IV	618	191	10000	22x10.50B	22x10.50DB
Mack A K-4	——	5150	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	O4IV	492	174	9500	36x8S	36x8DS
Mack A K-4	——	5250	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	2R	Opt	O4IV	492	174	9400	36x8S	36x8DS
Mack A K-6	——	6450	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	2R	Opt	O4IV	561	186	10400	22x10.50B	20x10.50DB
Mack A C-4-L	——	4550	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	156	9100	36x8S	40x8DS
Mack A C-4-M	——	5500	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	168	9800	36x6S	40x6DS
Mack A C-4-H	——	6000	Own	L	4	5 x6	471.2	40.0	75@1800	G	Own	Own	Spic	Own	Str	Gra	NE	Own	4	Own	Ch	Opt	OJXM	478	168	10150	36x7S	40x7DS
Mack A C-6	——	6450	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	Ch	Opt	O4IV	755	186	11400	24x10.50B	24x10.50DB
Mack A P	——	8500	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Spic	Han	Str	Gra	NE	Own	4	Own	Ch	Opt	O2IV	284	191	11700	36x7S	40x8DS
Mack A K-6 6 wheel	——	9000	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Cle	Han	Str	P	NE	Own	4	Own	2R	Opt	O6IV	1044	152-52	15600	22x9.75B	22x9.75DB
Mack A C-6 6 wheel	——	8500	Own	L	6	4¾x5¾	610.6	54.1	128@2200	G	Own	Own	Spic	Han	Str	P	NE	Own	4	Own	Ch	Opt	O6IV	1052	145-52	14300	40x8P	40x8DP
Mack A P 6 wheel	——	10500	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Spic	Han	Str	Gra	NE	Own	4	Own	Ch	Opt	O6IV	1052	145-52	14600	40x8P	40x8DP
Mack A P 6 wheel	——	11000	Own	L	6	5 x6	706.5	60.0	138@1900	G	Own	Own	Cle	Han	Str	Gra	NE	Own	4	Own	2R	Opt	O6IV	1044	152-52	15950	22x9.75B	22x9.75DB
Pierce-Arrow 13S 385	2	2503	Own	L	8	3½x5	385.0	39.2	125@2800	C	Long	Long	Cle	Han	Str	P	DR	Cla	4	Tim	Sp	33.5	B4IM-T	399	160	6000	20x8.25B	20x8.25DB
Pierce-Arrow 13T 361	2-2½	2200	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	Sp	34.3	B4IM	399	150	5625	20x7.50B	20x7.50DB
Pierce-Arrow 11T 298	2½	2150	Her	L	6	3¾x4½	298.0	33.7	70@2600	G	Long	Long	Cle	Han	Zen	P	DR	Cla	4	Tim	Sp	40.0	B4IM	399	150	5725	20x8.25B	20x8.25DB
Pierce-Arrow 11T 361	2½	2300	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Sp	34.4	B4IM	399	180	5800	20x8.25B	20x8.25DB
Pierce-Arrow 18W 361	3-4	3000	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	41.9	B4IA-T	473	150	6660	20x9.00B	20x9.00DB
Pierce-Arrow 18R 428	3-4	3600	Her	L	6	4⅜x4¾	428.0	46.0	94@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	28.6	B4IA	473	150	6860	20x9.00B	20x9.00DB
Pierce-Arrow 21B 501	3½	3750	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	36.0	B4IA	473	150	7050	20x9.75B	20x9.75DB
Pierce-Arrow 24X 501	4-5	4200	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	40.2	T4IA	618	160	9250	20x10.50B	20x10.50DB
Pierce-Arrow 24M 611	4-5	5000	Her	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	39 9	T4IA-T	618	160	10200	20x10.50B	20x10.50DB
Pierce-Arrow 28X 501	5½	4600	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	Wo	51.0	TO4IA	720	160	10675	24x10.50B	24x10.50DB
Pierce-Arrow 28M 611	5½	5400	Her	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	52.5	TO4IA	720	160	11600	24x10.50B	24x10.50DB
Pierce-Arrow 28Y 479	5½	4400	Her	L	6	4⅝x4¾	479.0	51.3	104@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Own	Wo	53.0	TO4IA	720	160	10675	24x10.50B	24x10.50DB
Pierce-Arrow 31K 611	5½	——	Her	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	42.0	TO4IA	720	170	11675	24x10.50B	40x8DS
Pierce-Arrow 75M 279T	*75000	6400	Her	L	6	5¼x6	779.0	66.1	150@1800	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Own	Wo	51.9	TO4IA	720	190	12750	24x10.50B	24x10.50DB
Pierce-Arrow 24T 361T	*24000	2400	Her	L	6	4⅛x4½	361.0	40.3	77@2400	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Sp	48.1	B4IM	399	150	5725	20x8.25	20x8.25D
Pierce-Arrow 35R 428T	*35000	3800	Her	L	6	4⅜x4¾	428.0	46.0	94@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	47 8	B4IA	473	150	7050	20x9.75	20x9.75D
Pierce-Arrow 45X 501T	*45000	4800	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	57.2	T4IA	618	160	9300	20x10.50	20x10.50D
†Pierce-Arrow 31L 501S	*34000	——	Her	L	6	4½x5¼	501.0	48.6	110@2200	G	Long	Long	Cle	Han	Zen	P	DR	Cov	4	Tim	Wo	49.0	T6IA	1022	200	13200	20x9.75	20x9.75D
†Pierce-Arrow 41K 479S	*44000	——	Her	L	6	5¼x6	779.0	66.1	150@1800	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	47.2	T6IA	1022	200	14500	20x10.50	20x10.50D
†Pierce-Arrow 31K 611S	*34000	——	Her	L	6	4¾x5¾	611.0	54.1	130@2000	G	Long	Long	Spic	Ross	Str	P	DR	Own	4	Tim	Wo	40.6	T6IA	1022	200	14200	20x9.75	20x9.75D
Reo 1 A	1½	625	Own	L	4	3⅛x4½	205.0	23.3	51@2500	G	Per	Long	Cle	Ross	Zen	P	DR	Cla	4	Cla	Sp	37.1	L4IH	230	136	2930	20x6.00	32x6
Reo 1 C	1½	665	Own	L	4	3⅛x4½	205.0	23.3	51@2500	G	Per	Long	Cle	Ross	Zen	P	DR	Cla	4	Cla	Sp	37.1	L4IH	230	160	3020	20x6.00	32x6
Reo 1 B	1½	745	Own	L	6	3⅛x5	230.0	23.4	68@2800	C	Own	Long	Cle	Ross	Zen	P	DR	Cle	4	Own	Sp	34.8	L4IH	246	140	3100	20x6.00B	32x6
Reo 1 D	1½	765	Own	L	6	3⅛x5	230.0	23.4	68@2800	C	Own	Long	Cle	Ross	Zen	P	DR	Cla	4	Cla	Sp	37 1	L4IH	230	164	3200	20x6.00	32x6
Reo D F X	1½	1095	Own	L	6	3⅝x5	268.3	27.3	85@3200	C	Own	Long	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	34.1	L4IH	289	135	3200	20x6.00	20x6.00
Reo F A X	2	1295	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	Own	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	34.3	L4IH	289	137	3525	20x6.00	32x6
Reo F E X	2	1395	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	Own	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	34.3	L4IH	289	152	3200	20x6.00	32x6
Reo F F X	2	1395	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	Own	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	34.3	L4IH	289	156	3525	20x6.00	32x6
Reo F H X	2½	1595	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	McC	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	37.7	L4IH	289	142	3750	32x6	32x6D
Reo F C X	2½	1646	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	McC	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	37.7	L4IH	289	152	4165	32x6	32x6D
Reo F D X	2½	1745	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	McC	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	37.7	L4IH	289	168	4075	32x6	32x6D
Reo G A	3	2035	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	McC	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	40.5	L4IH-T	344	163	4625	32x6	32x6D
Reo G C	3	2140	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	McC	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	40.5	L4IH-T	344	179	4850	32x6	32x6D
Reo G D	3	2085	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	McC	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	78.1	L4IH-T	344	144	4650	32x6	32x6D
Reo G C S	3	2375	Own	L	6	3⅝x5	268.3	27.3	70@2800	C	McC	Br-L	Cle	Ross	Sch	Vac	DR	Own	4	Own	Sp	40.5	L4IH	344	210	5300	32x6	32x6D
Reo 4-H	4	2800	Own	L	6	4⅛x4¾	381.0	40.8	101@2600	G	McC	Long	Cle	Ross	Sch	P	DR	Own	4	Cla	Sp	42.4	L4IHV-T	390	150	6150	20x8.25	20x9.00B
Reo 4-J	4	2875	Own	L	6	4⅛x4¾	381.0	40.8	101@2600	G	McC	Long	Cle	Ross	Sch	P	DR	Own	4	Cla	Sp	42.4	L4IHV-T	390	170	6280	20x8.25	20x9.00B
Reo 4-K	4	2950	Own	L	6	4⅛x4¾	381.0	40.8	101@2600	G	McC	Long	Cle	Ross	Sch	P	DR	Own	4	Cla	Sp	42.4	L4IHV-T	390	190	6395	20x8.25	20x9.00B
Stewart 30	1	695	Lyc	L	4	3⅜x4½	199.0	22.5	50@2600	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35 1	B4IM	257	130	*3158	20x6.50	20x6.50
Stewart 30 X	1	795	Lyc	L	6	3 x4¾	201.5	23.8	60@2800	G	Fed	Borg	Spic	Ross	Str	P	DR	W-G	4	Cla	Sp	35.1	B4IM	257	130	3199	20x6.50	20x6.50
Stewart 42 X	1½	785	Lyc	L	6	3¼x4½	224.0	25.3	62@2600	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4	Cla	Sp	35.1	B4IM	257	134	3730	20x6.50	20x6.50
Stewart 40 X A	1½	995	Lyc	L	6	3¼x4½	224.0	25.3	62@2600	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4	Cla	Sp	——	B4IM	257	145	3670	20x6.50	20x6.50D
Stewart 43 X	2	995	Lyc	L	6	3¼x4½	224.0	25.3	62@2600	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4	Cla	Sp	35.1	B4IM	257	145	4375	20x6.50	20x6.50DB
Stewart 50 X	2	1195	Lyc	L	6	3⅜x4½	242.0	27.3	65@2800	G	Fed	Borg	Spic	Ross	Zen	P	DR	W-G	4	Cla	Sp	35.1	B4IM	257	145	4260	20x6.50	20x6.50DB
Stewart 29 X S	2	1695	Lyc	L	6	3¾x4½	298.0	33.7	85@2750	G	Fed	Ful	Spic	Ross	Str	P	DR	Ful	4	Cla	Sp	44.1	B4IM	307	145	5194	20x7.00	20x7.00D
Stewart 32 X	2½	1990	Lyc	L	6	3¾x4½	298.0	33.7	85@2750	G

Big Truck Fleet Operators Train Drivers in Schools

(Continued from Page 7)

closed the meeting with an inspirational talk.

"While these meetings were beneficial, and are still necessary, we felt they were not giving the men sufficient training. Methods of selling have changed in the last ten years and our men, as we have already mentioned, were still selling in the old way. We came to the conclusion that the most practical thing would be not to try to change the men entirely, but to start with the element of personal contact with the dealer and train our men to use it more effectively. Our dealers are independents and their principal concern is competition from the chains, which have been successful in part because they have developed better methods of handling stocks, accounting, displays credits, delivery, etc. Our routemen can render our independent dealer-customers a genuine service by teaching them these principles and helping them to use them to advantage. In this way our routemen can strengthen their friendships with the dealers and pave the way for greater sales.

"We have, therefore, in addition to our bi-weekly meetings, started a sales school to educate our routemen in the principle of retail store operation. Our text for this school is a sales manual which we, ourselves, have prepared, and which we believe is the first and only one of its kind in our industry. This manual provides for ten two-hour sessions, each of which is conducted according to the following order:

"First—Written examination—Each session begins with a written examination, covering the material discussed in the previous session. Thus, our first examination, given at the beginning of the second session, consisted of the following questions:

"1. What is the purpose of these lessons?

"2. What is meant by new salesmanship?

"3. What new services are manufacturers giving which they did not give in the old days?

"4. Why must we have knowledge of the new ways of doing business?

"5. What is your first duty as a salesman?

"6. Explain briefly, the company's four policies toward employees, dealers, consumers, competitors.

"7. What is the necessity for good knowledge of our products?

"8. Give the chief advantages of each of the following:

(List of some products)

"II. Principles of Retailing.—A discussion of the principles of retailing follows the written examination. Among the topics considered are: Consumer habits, advertising, factors in retailing, independent versus chain store distribution, display, sampling, turnover versus the number of brands and objections. We aim to give the man a complete picture so he can aid the dealer in any department of his business.

"III. Product Study.—Each product is taken up in order and its uses, advantages and disadvantages are considered.

"IV. Weekly Bulletin.—The concluding part of the session consists of a discussion of the weekly bulletin which covers the following material:

"1. Current parallels drawn to our sales situation.

"2. Test talks in connection with sales contests.

"3. General information of an exclusively current nature and designed to arouse enthusiasm in the school and in the sales contest. This includes information on the current advertising activities, newspaper insertions, radio broadcasts, and special offers.

"We felt that this sales school itself would not be a success, and so we tied up with a sales contest to run concurrently for the ten-week period. The standing of the men in this contest is determined 50 per cent, by their total sales and 50 per cent, by the average grades earned by them on their school examination papers. The prizes are a two-week vacation for the winners and their families, with all expenses paid by the company.

"We have divided the route men into groups of thirty-five each and assigned a sales manager or an assistant sales manager to each group. Each sales manager is given special instructions on how to conduct the school through a manual which we have prepared for his use. Both the teachers' and the route men's manuals are of the loose-leaf type, and the sections for the several sessions are typed on paper of different colors to make them readily distinguishable.

3. A continuous school for experienced men.

This school is conducted on the assumption that a route salesman needs not only initial training in the fundamentals of his work but also a continuous training in the application of these fundamentals to constantly changing conditions. In some instances these continuous schools take the place of periodic meetings. In other cases small groups are trained in these schools in rotation.

One company reports that "each of our drivers attends our school about once every two months, as it takes that time to rotate our force, with small classes of eighteen to twenty-five men in each group."

"The school next described is conducted very much like some of the sales meetings described previously. It is held in the main dining room of the plant every Thursday night, with one of the owners of the business acting as instructor. The class usually includes twenty route salesmen, the foremen of the departments and the office staff. The proprietor of this business says:

"The class is instructed thoroughly in the operation of the laundry. A woman who has never regularly used laundry service, but who may become a good customer if her doubts and fears are removed, will have many questions to ask. Our route salesmen must be prepared to tell her through how many waters her clothes are washed and what kind of soap is used. She will ask if there is danger of the clothes being torn. Will they be mixed with other families? Will they wear as long, if sent to the laundry? What precautions are taken to prevent delicate colors from fading? A thousand such questions will be met by the progressive salesman. The man who cannot answer these questions is not likely to get much new business. In these classes, our salesmen learn how to meet these inquiries. We use the round table method largely. Each foreman is called on to explain the work of his department. Questions are freely asked and answered.

"We find the articles in the laundry trade journals a great help; in fact, they furnish us with a great deal of our teaching material. The best and most practical article of the current months are read aloud and discussed. In this way we know that the information and suggestion contained in them get passed on to all who need them. Occasionally articles on salesmanship are read. Sometimes a good book on salesmanship is studied.

"At the close of the evening we usually serve refreshments. Every so often we have a real dinner.

"Besides the information received by our employees, much good results from these classes in other directions. A spirit of camaraderie and friendship is developed, and there is created, too, an interest in and a loyalty for the business, which otherwise would be difficult to secure."

EVANSVILLE DEALERS ON OUTING TODAY

Evansville, Ind., July 28.—The Evansville Automobile Dealers' Association and their salesmen will have their annual outing June 27 in the form of a boat ride to Green River and an all-day frolic at the grounds. John W. Walton is president of the association, Walter A. Schnake and E. E. Nolan are the outing committee.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Major Specifications and Mechanical Details of 1932 Commercial Cars

LEADING MAKES NATIONALLY DISTRIBUTED

(Continued from Page 10)

Make and Model	Capacity—Tons or Lbs.	Chassis Price	Engine	Valve Arr'g'm't	No. of Cyls.	Bore and Stroke	Piston Disp.	Tax H. P.	Max. Brake H. P. and Peak R. P. M.	Type Camshaft Drive	Radiator Make	Clutch Make	Universals Make	Steering Gear Make	Carburetor Make	Fuel Feed Type	Make Electr'l System	Make Transmission	No. Spds. For.	Rear Axle Make	Type Final Drive	Final Gear Reduction	Type Service Brakes	Area Service Brake Lining	Standard Wheel Base	Chassis Wgt.	Standard Tire Sizes Front	Standard Tire Sizes Rear
White 51 A	*17000	3750	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	Sp	35.6	O2IM	335	170	6438	36x5.00P	36x8.00S
White 630 L	*17000	5000	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	37.3	L4IHV	553	157	8500	20x9.00B	20x9.00DB
White 618 A	*18000	3600	Own	L	6	3¾x4½	299.0	33.7	77@2400	C	Own	Own	Spic	Ross	Zen	Vac	DR	Own	5	Own	2R	57.2	L4IHV	349	166	6675	20x9.00B	20x9.00DB
White 621	*18000	4650	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	OL41HV	484	157	7945	20x9.00B	20x9.00DB
White 640	*20000	6100	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	Sp	33.9	O4IA	553	180	9200	20x9.00B	20x9.00DB
White 630	*20000	5000	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O4IHV	553	168	8500	20x9.00B	20x9.00DB
White 58	*22000	4400	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Own	Zen	Vac	Eis	Own	4	Own	2R	49.7	OPXM	224	180	7797	36x5	36x5SD
White 630 A	*22000	5000	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	Sp	41.4	O4IHV	553	168	6500	20x9.00B	20x9.00DB
White 641	*24000	6450	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	46.9	O4IA	595	180	9700	20x9.75B	20x9.75DB
*White 630 SW200	*24000	6245	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Tim	Wo	44.2	OT1HV	514	193	10060	20x8.25B	20x8.25DB
White 631	*24000	5750	Own	H	6	4 x5¼	396.0	38.4	92@2100	C	Own	Own	Spic	Ross	Zen	P	DR	Own	4	Own	2R	56.9	O4IHV	595	168	9000	20x9.25B	20x9.25DB
*White 642 SW310	*34000	8025	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	55.6	OT1A	588	198	12670	20x9.00B	20x9.00DB
White 58 SS	*30000	5300	Own	L	4	4¼x5¾	326.0	28.9	54@1600	G	Own	Own	Spic	Ross	Zen	Vac	L-N	Own	4	Own	2R	77.6	OPXM	224	196	9300	24x10.50B	24x10.50DB
White 643	*32000	6950	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	623	180	10900	24x10.50B	24x10.50DB
White 642	*28000	6750	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Own	2R	66.5	O4IA	623	180	10600	24x9.75B	24x9.75DB
*White 643 SW410	*40000	8550	Own	H	6	4⅜x5¾	519.0	45.9	118@2100	C	Own	Own	Spic	Ross	Zen	P	L-N	Own	4	Tim	Wo	69.1	OT1A	588	198	14400	40x8	40x8D
Willys-Overland 6-C-113	½	415	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	Own	3	Own	Sp	12.4	B4IM	143	113	1920	19x6.00	19x6.00
Willys-Overland 6-C-131	1½	595	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	131	2750	20x5.50	32x6
Willys-Overland 6-C-157	1½	635	Own	L	6	3¼x3⅞	193.0	25.3	65@3400	C	Fed	Own	Spic	Own	Til	P	Aut	W-G	4	Cla	Sp	40.8	B4IM	235	157	2900	20x5.50	32x6

GENERAL NOTATIONS

***†REFERENCE MARKS** apply to individual lines only and explanations are given under the subdivision for each company in the "SPECIAL NOTATIONS."

CAPACITIES given in this table are in tons or fractions of tons. *Shows maximum allowable gross weight in pounds.

ENGINE—Bud, Buda; Con, Continental; Her, Hercules; Lyc, Lycoming; Pont, Pontiac; Wak, Waukesha; Wis, Wisconsin; Hall, American Car & Foundry; Ster, Sterling Engine Co.

VALVE ARRANGEMENT—L, "L" head; H, in head, O, overhead; S, sleeve.

TYPE OF CAMSHAFT DRIVE—G, gear; C, chain.

RADIATOR MAKE—G&O, G. & O. Mfg. Co.; Per, Perfex Corp; Long, Long Mfg. Co.; Har, Harrison Radiator Corp; Fed, Fedders Mfg. Co.; McC, McCord Radiator & Mfg. Co.; Mod, Modine Mfg. Co.; Hex, Hexcel Radiator Co. Yo, Young.

CLUTCH MAKE—Jon, Jones Clutch & Gear Co.; Ful, Fuller & Sons Mfg. Co.; Borg, Borg & Beck Co.; Br-L, Brown Lipe Gear Co.; Rock, Rockford Drill & Machine Co.; Cov, Covert Gear Co.; Long, Long Mfg. Co.; Detr, Detroit Gear & Machine Co.; Mer, Merchant & Evans; Hel, Merchant & Evans.

UNIVERSALS MAKE—Spic, Spicer Mfg. Co.; Blo, Blood Bros. Machine Co.; Sup, Superior Universal Products; Un, Universal Products Co.; Cle, Cleveland Steel Products Corp.; Pet, Peters; Opt, optional; Mec, Mechanics Machine Co.

STEERING GEAR MAKE—Ross, Ross Gear & Tool Co.; Han, Hannum Mfg. Co. Sag, Saginaw Steering Gear Co.; Gem, Gemmer Mfg. Co.; Col, Columbus Gear & Pump Co.; W-G, Warner Gear Corp.

CARBURETOR—Car, Carter; Mar, Marvel; Sch, Wheeler-Schebler; Str, Stromberg; DL, Detroit Lubricator; Til, Tillotson; Zen, Zenith-Detroit.

FUEL FEED—Gra, gravity; Vac, vacuum tank; P, fuel pump.

ELECTRICAL SYSTEM — AB, American-Bosch; Aut, Electric Auto-Lite; Eis, Eisemann; L-N, Lece-Neville; NE, North East; RB, Robert Bosch; DR, Delco-Remy.

TRANSMISSION—Br-L, Brown-Lipe; Cov, Covert; Ful, Fuller; Mec, Mechanics Machine; Mun, Muncie; W-G, Warner Gear; Cot, Cotta Gear Co.; Cla, Clark Equipment Co.

REAR AXLE—Cla, Clark Equipment; Col, Columbia; Eat, Eaton; Pont, Pontiac; Sal, Salisbury; Tim, Timken; Wis, Wisconsin.

FINAL DRIVE—IG, internal gear; St, straight bevel; Sp, spiral bevel; Wo, worm; 2R, double reduction; Ch, chain; S-T, semi-transverse.

TYPE OF SERVICE BRAKES—

B4IM, Bendix, 4 wheel internal mechanical; B4MV, Bendix, 4 wheel, mechanical, vacuum; B6IA, Bendix, 6 wheel, internal, air; B4IMV, Bendix, 4 wheel internal mechanical, vacuum; BO4IMV, Bendix, own, 4 wheel, internal, mechanical, vacuum; BrIA, Bendix, operating on 4 rear wheels, internal air; BW4IM, Bendix front, Wisconsin rear, 4 wheel, internal, mechanical; BE4IM, Bendix front, Eaton rear, 4 wheel, internal, mechanical; B4IH, Bendix 4 wheel, internal, hydraulic.

CB4IM, Columbia, Bendix, 4 wheel, internal, mechanical; C4IM, Columbia, 4 wheel, internal, mechanical; K2IM, Clark, 2 wheel, internal, mechanical; CR4IA, Christensen-Relay, 4 wheel internal, air.

L4IHVA, Lockheed, 4 wheel, internal, hydraulic, vacuum, air; LO4ID, Lockheed, own, 4 wheel, internal, drive shaft; LO4IV, Lockheed, own, 4 wheel, internal, vacuum, LT4DV, Lockheed, Timken, 4 wheel, drive shaft, vacuum; L4IH, Lockheed 4 wheel, internal, hydraulic; L4IHA, Lockheed 4 wheel, internal, hydraulic, air; L4IHV, Lockheed, 4 wheel, internal, hydraulic, vacuum; LT4IHV, Lockheed, Timken, 4 wheel, internal, hydraulic, vacuum; LT4IVA, Lockheed, Timken, 4 wheel, internal, vacuum, air; L6IHV, Lockheed, 6 Wheel, internal, hydraulic, vacuum; L6IH, Lockheed, 6 wheel, internal, hydraulic.

O2IM, Own, 2 wheel, internal, mechanical; O2IV, Own, 2 wheel, internal, vacuum; O4IA, Own, 4 wheel, internal, air; O4IH, Own, 4 wheel, internal, hydraulic; O4IHV, Own, 4 wheel internal, hydraulic, vacuum; O4IM, Own, 4 wheel, internal, mechanical; O4IV, Own, 4 wheel, internal, vacuum; O4M, Own, 4 wheel, mechanical; O2XM, Own, 2 wheel, external, mechanical; O4XM Own, 4 wheel, external, mechanical; O6IA, Own, 6 wheel, internal, air; OJXM, Own, jack shaft, external, mechanical; OL4IHV, Own, Lockheed, 4 wheel, internal, hydraulic, vacuum; OPX, Own, propeller shaft, external; OPXM, Own, propeller shaft, external, mechanical; OPM, Own, propeller shaft, mechanical; ORIV, Own, rear wheels, internal, vacuum; OTIHV, Own Timken, internal, hydraulic, vacuum.

S4IM, Steeldraulic, 4 wheel, internal, mechanical.

T4rIA, Timken, operating on 4 rear wheels, internal, air; T4IA, Timken, 4 wheel, internal, air; T6IA, Timken, 6 wheel, internal, air; T2IMV, Timken, 2 wheel, internal, mechanical, vacuum.

W4I, Westinghouse, 4 wheel, internal; W4IA, Westinghouse, 4 wheel, internal, air; 46IA, Westinghouse, 6 wheel, internal, air; 4IA, 4 wheel, internal, air; 4IH, 4 wheel, internal, hydraulic; 4M, 4 wheel, mechanical.

-T, True-stop. *Models on which True-stop is optional.

WHEEL BASES given are standard, but optional wheel bases are available in many cases.

***CHASSIS WEIGHT** according to Automotive Daily News formula, which is the chassis with gas, oil, water and spare tire, but without cab or other equipment.

TIRES—B, balloon; D, dual; S, solid; P, pneumatic.

SPECIAL NOTATIONS

AUTOCAR

†Engines in these models are located under the driver's seat.

*Six-wheeler.

Model R also available on 171 and 189 inches wheel base.

BROCKWAY

*Models equipped with twin ignition.

CHEVROLET

Utility model available on 131-inch wheel base with chassis weight of 2,760 pounds and equipped with dual rear wheels.

DIAMOND T

*Six-wheelers.

Additional standard wheel base available as follows:

551	158	750	167, 192
504	166½	801	180½, 199½
506	174	1200	174½, 180
603	157, 179	1600	174½, 180
606	177½	1601	184

DODGE

*Models F40, F41, F61 and F62 can be had with double drop frame.

†Six wheelers.

FEDERAL

†Six-wheelers.

*Also rated in pounds at total allowable weight as follows:

D 3	8,500	T 10 W	18,000
E 3	8,500	T 10 D R	18,000
F 7	10,000	U 6	21,000
F 8	11,500	U 6 D R	21,000
A 6	13,500	X 6 S W	18,500
A 6 T	15,000	C 7	24,000
A 6 T W	15,000	C 7 W	24,000
T 3 W	14,000	C 8	24,000
T 8 W F	15,000	C 8 W	24,000
D 2 S W	12,500	X 8	30,000
E 2 S W	12,500	X 8 D R	30,000
D 2 D	12,500	X 8 R	30,000
2 E D	12,500	X 8 R D R	30,000
T 10 B	18,000		

†Both the four and six cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

Model T 10 SW also available in 206 and 224 inch wheel bases.

GENERAL MOTORS TRUCK

*Capacity indicated is the Straight Rating (combined weight of chassis body, equipment and pay load) for which each chassis is designed and guaranteed to satisfactorily operate under average conditions. The size of the tires used does not affect this Straight Rating, but to secure maximum tire mileage it is suggested that the total gross weight be limited to a "recommended gross weight" for each tire equipment based on tire capacity. Prices cover base chassis and vary with wheel base and tire combinations. The number of wheel base lengths, tire types, range of "recommended gross weights" and resulting pay load range (assuming nominal body allowance) for each model follow:—

Note: Models T-15 to T-61, inclusive, are available for export only as coach chassis.

Model	Wheel Bases	Tire Types	Range of "Rec. Gross Weights"	Pay Load Range
T-15	3	10	4530- 6500	½-1½
T-18	.	..	7500- 8200	1½-2
T-19	4	..	7500-10000	1½-2½
T-23	2	..	8500-10000	2-3
T-25	3	17	6800- 9000	1½-2
T-26	4	..	8500-11000	2-3
T-30	3	15	10000-12500	2-3
T-31	4	..	11000-14000	2½-4
T-42	4	12	12000-15000	2½-4
T-44	4	12	12000-16000	3-4½
T-45	4	..	13500-16000	3-4½
T-51	4	..	16500-19000	4-5½
T-60	4	18	18500-22000	5-6½
T-61	4	..	19500-22000	5-6½
T-82	4	12	19000-24000	5-7
T-83	4	..	20000-24000	5-7
T-85	3	..	25000-30000	6-8
T-90	3	7	22000-28000	5-7½
T-95	3	..	30000-40000	7-11

Optional rear axle gear ratios available for all models, except Model T-18. Double reduction axles available for Models T-45, T-51, T-60, T-61, T-82, T-83 and T-95.

GRAMM

Series	Straight Rating	Wheel Base	Pay Load Range
AX 4	8,000	157	1 to 1½ tons
AX 6	8,000	187	1 to 1½ tons
BX 4	10 000	157	1½ to 2 tons
BX 6	10,000	157	1½ to 2 tons
CX 4	12,000	157-180	2 to 3 tons
CX 6	12,000	157-180	2 to 3 tons
B	12,000	157-174	1¾ to 2½ tons
C	14,000	145-196	2 to 3 tons
D	17,000	145-196	2½ to 4 tons
E	20,000	145-224	3 to 4½ tons
EY	..	..	3 to 4 tons
G	24,000	165-235	4 to 6 tons
G 8	24,000	165-235	4 to 6 tons
GY	..	..	4 to 5 tons
GW	28,000	157-240	5 to 7½ tons
HY	..	..	5 to 6½ tons

†Both the four and six-cylinder are also offered in 157-inch wheel base at $1,145 and $1,345, respectively.

INDIANA

*Six-wheelers.

PIERCE-ARROW

*Optional final drive on Models PW, PX, PY and PZ.

†Six-wheelers.

REO

Models DF, FA, FE and FF are available with dual wheels at additional cost.

*Model DF X can be had with 3 speed transmission and single tires for $895.

Model 1 D can be secured in 164-inch wheel base at $785.

STEWART

Models 30 and 30X can also be supplied in 120, 140 and 160-inch wheel base.

Models 40XA can also be supplied in 134, 145, 160 and 176-inch wheel base.

Model 29XS can be supplied in 135, 160, 176 and 190-inch wheel base.

*Models 18X and 32X can be supplied in 148, 190 and 220-inch wheel base.

*Models 19X, 31X and 27XS can be supplied in 148, 172, 190, 220 and 235-inch wheel base.

As optional equipment Models 18X, 19X, 31X and 27XS can be supplied with Timken dual reduction rear axle.

Models 38-8, 38-6, 48-8 and 58-8 can be supplied in 160, 170, 180, 196, 226 and 241-inch wheel base and worm axle.

WHITE

Six-wheelers.

CLASSIFIED ADVERTISEMENTS IN THE AUTOMOTIVE DAILY NEWS BRING RESULTS

Pratt Analysis Refutes Railway Charge Against Truck Line Competition

(Continued from Page 1)

such eminent persons as Prof. William Z. Ripley, Harvard economist, "have made statements about trucks and railroads which are utterly absurd."

It was Prof. Ripley who urged "taxation of all competitors of railroads to put them on an equal footing for fair competition with railroads in the interest of better and cheaper service to the public."

"This professor," said Mr. Pratt, "is actually suggesting the raising of taxes and operating expenses of trucks so that they can render better and cheaper service to the public!

"Truly it takes a professor of economics to think of such a subtle way of decreasing the cost of distribution. No ordinary business man who operates trucks in his business, whether for hire or not, would be able to think of anything so original as lowering his distribution costs by increasing the taxes on his trucks."

In answering the "misleading statements" of railroad propagandists, Mr. Pratt believes truck owners and truck producers might well bear in mind the argument that, after all, the persons who make use of trucks and railroads have made no complaint against the truck.

"It must be remembered," he pointed out, "that all the hue and cry for regulation of trucks has come from either the railroads or the financial interest back of them—not from those who are most concerned, the shippers.

"In the absence of complaints on the part of the shippers, has the government any right to regulate the trucks for the benefit of the railroads, and by doing so increase the cost of handling commodities to the ultimate consumer?

"And has the government any right by regulation to increase the cost of freight charges to the shipper who is satisfied that the rates are reasonable, and in some cases even admits that truck rates are lower than they should be to permit the motor carrier to make a profit sufficiently large to set up adequate reserves to assure his staying in business?

"If the traffic all had to go back to he railroads for any reason, the rates would rise immediately and we would be starting a long and needless fight on the part of the shipper to get rates back to the point to which he had adjusted his business and his charges."

It is not, Mr. Pratt declares, any "unfair" methods of competition that have enabled trucks to progress, but rather the contrast between the flexibility of the truck and the inflexibility of minds of railroad executives.

"To operate a motor truck in public transportation successfully," he pointed out, "requires ability and authority to make prompt decisions and immediately act upon them.

"This is a radical departure from railroad methods, as railroad executives are unwilling to delegate authority to those in more or less subordinate positions. Yet in the motor transportation industry, situations constantly arise in which it is necessary for the man on the firing line to be equipped with ability and authority to make a prompt decision and translate it into action.

"Motor trucks can and do give special and emergency service far superior to anything which the rails, in the very nature of things, can give. Motor trucks are available at any hour of the day or night, and under any conditions of demand. Packing requirements, moreover, are much less onerous on trucks.

"The truck renders to the individual shipper a variety of services which the railroad is not in a position to perform. In connection with these special services, the question of rate does not enter the problem. The shipper who has experinced the benefits of these services would not go back to the railroad even if truck rates were raised to a point where they were even with, or above rail rates.'

Perhaps the greatest absurdities growing out of the railroad propaganda, Mr. Pratt believes, were some of the bills introduced during recent sessions of state Legislatures.

"Most of them," he said, "fell of their own weight because of their lack of intelligent draftsmanship. To get the small percentage of trucks which are operating for hire (approximately 15 per cent. of the total number of trucks registered) bills were introduced that would tax the other 85 per cent. so greatly as to make their operation in many instances impossible within the economic limits of the price range of the commodity handled.

"Barring the purely agricultural products hauled by motor trucks, the great bulk of these commodities handled by the 'innocent' 85 per cent. of trucks is carried at one or more stages of its transportation journey by railroads. The cost of that part of it which would normally be handled by motor trucks would, under bills of railroad sponsorship, be so expensive that the only alternative would be to greatly limit the areas of distribution, or go back to horses and wagons."

JUNE PRODUCTION TOTALED 190,204; JUST UNDER MAY

(Continued from Page 1)

in number and of 59.4 per cent. in value, as compared with 5,316,493, valued at $3,422,871,872, reported for 1929, the last preceding census year. The items which contributed to the total for 1931 are as follows: 1,904,878 passenger vehicles, valued at $1,115,692,917; 9,528 public conveyances, $25,096,337; 1,208 other vehicles and apparatus, government (Federal, state, county and municipal), etc., $6,132,570; 244,837 commercial vehicles, $162,289,201; 127,208 chassis, $71,154,039; 9,623 trailers, $8,131,851. The passenger vehicles reported for 1931 comprised 1,779,647 closed cars, valued at $1,055,473,752, and 125,231 pen cars, $60,219,165. The figures for closed cars represent decreases of 54.6 per cent. and 58.4 per cent, respectively, as compared with 3,917,370, valued at $2,537,937,525, reported for 1929; and those for open cars represent decreases of 71.8 per cent. and 73.7 per cent., respectively, as compared with 444,845, valued at $229,401,843, reported for 1929.

In addition, the value of other products—parts, accessories, etc.—reported by establishments engaged primarily in the manufacture of complete motor vehicles (or trailers), amounted to $181,077,399, making an aggregate of $1,569,574,314 for the industry. Establishments whose principal products are bodies, parts or accessories are classified in other industries.

The table below is based on figures received from 144 manufacturers in the United States for recent months, 42 making passenger cars and 113 making trucks (11 making both passenger cars and trucks). Figures for passenger cars include only those designed as pleasure vehicles, while the taxicabs listed with trucks are those built specifically for that purpose. Figures for trucks include ambulances, funeral cars, fire apparatus, street sweepers and buses. Canadian figures are supllied by the Dominion Bureau of Statistics:

UNITED STATES

	Total	Passenger Cars	Trucks(1)
1930			
June	334,606	285,473	49,033
1931			
June	250,000	110,936	40,604
1932			
January	119,344	98,176	20,638
February	117,418	94,085	23,333
March	118,959	99,325	19,634
April	148,326	120,906	27,420
May	*184,284	157,683	26,601
June	183,092	160,103	22,989
Total Six months (Jan.-June)			
1930	2,198,580	1,860,361	333,219
1931	1,572,935	1,315,952	256,983
1932	871,423	730,808	140,615

*Revised.
(1)Truck figure includes taxicabs.

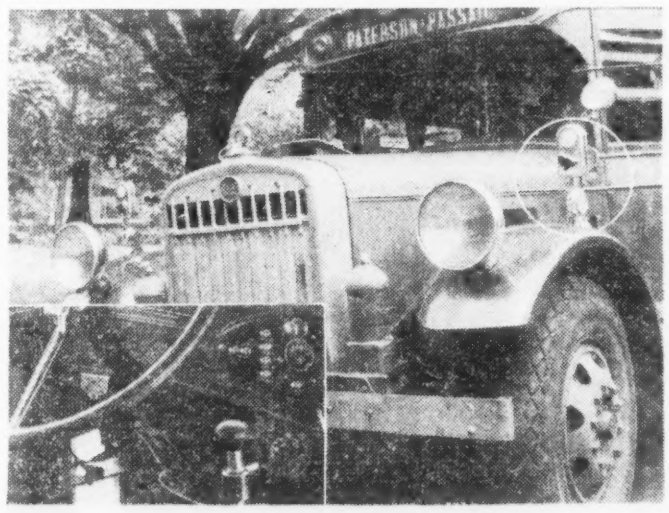
CANADA

	Total	Passenger Cars	Trucks
1930			
June	15,090	12,194	2,896
1931			
June	6,835	5,583	1,252
1932			
January	3,731	3,112	619
February	5,477	4,494	983
March	8,318	6,604	1,714
April	6,810	5,660	1,150
May	8,221	7,269	952
June	7,112	6,308	804
Total Six Months (Jan.-June)			
1930	110,685	93,359	17,326
1931	66,092	52,811	13,281
1932	39,669	33,447	6,222

DODGE ADDS DEALERS

Detroit, Mich., July 28.—Dodge Brothers Corporation, division of Chrsyler Motors, today announced the addition of seven new dealers during the period from June 30 to July 6, as follows: Walker Sales Company, Akron, O.; Price Garage Company, Inc., Price, Utah; Spencer Auto Company, Evanston, Wyo.; C. C. Skinner, Mountain View, Cal.; Hiler Motor Service Company, Havre, Mont.; McElroy Motor Company, Irvine, Ky.; Red Front Garage, Vernal, Utah.

Inter-City Installs Autoposts



The accompanying photograph shows a recent installation of Autoposts on an Inter-City Transportation Company passenger bus. The equipment, mounted on the front fenders, has done much to prevent accidents and to give the drivers a greater sense of driving control, it is claimed.

The inset shows the signal control switch, mounted on the gear shift lever, and the parking and ditch light controls beneath the lower left side of the dash. Both are convenient to operate and within easy reach of the driver.

This equipment meets the requirements of the New Jersey state law where Inter-City operates its buses, that all commercial vehicles be equipped with mechanical signals by January 1. The Autoposts, in addition to signalling the direction of the turns, combines driving mirrors, parking lights, trouble lights, ditch lights and fender guides in one unit. An additional rear unit also flashes red, with double arrows to signal the direction of the turn to be made.

Since a complete commercial Autoposts installation includes both the fender and rear unit, giving three direction signals, one on the fender and two on the rear, it is extremely improbable that if the switch is turned on a signal will not be given. The only way that a signal could fail to be given would be for all three bulbs to blow at one time.

B. S. A. (BRITISH) PUTS OUT 93-INCH FRONT WHEEL DRIVE

(Continued from Page C)

ing in the bell housing of the clutch. This push-rod actuates a rocker arm, which in turn applies and relieves the pressure on the thrust race.

Again the gear change mechanism is of more than passing interest. A long lever, which falls close to the driver's hand, is mounted on the forked end of an enclosed push-rod, an extension of the lever passing into a cup formed in an arm which is clipped to the enclosing tube of the push-rod; the result is that fore and aft movements of the gear lever will cause the push-rod to move inwards and outwards in the enclosing tube, whilst the transverse movements given by the driver to the gear lever causes the whole mechanism to oscillate through the desired angle.

The drive from the gearbox is conveyed to the front through a short shaft to worm and wheel gearing and a differential, whence cardan shafts emerge from the sides of the casing, and so to the wheels, fabric universal joints being used at the inner ends of the shafts and mechanical joints of the extremities.

As might be expected, four-wheel braking is employed, but the design of the brake at the front is a little out of the ordinary. Actually, a single drum is mounted on the off side of the differential casing, the retarding action being conveyed to the road wheels by the cardan shafts. At the rear there is, of course, a single drum to each wheel. All brakes are operated simultaneously by the pedal, and the rear brakes can be applied by hand.

DE SOTO DEALERS, SALESMEN ATTEND DISTRICT DINNER

(Continued from Page 1)

effort at the present time and the necessity for more customer-concontacts and demonstrations.

The competition in the merchandising of automobiles, Mr. Rowland pointed out, was not confined to those engaged in selling competitive makes of cars alone, but increased demand on the family budget was being felt from such competition as oil burners, electric refrigerators and, most recently, air conditioning units. The necessity for more prospect coverage was evident, he said, from the results of a recent survey conducted by the De Soto Company, from which it was found that eight out of every ten new car sales originate with the owner and the salesman only accounts for the other two.

Orrin P. Kilbourn, vice-president, J. Sterling Getchell, advertising agency, outlined the sales plan which has been adopted and showed reproductions of the direct-mail pieces which will be sent to a selected group of automobile owners.

G. V. H. Carins, New York district manager, De Soto Motor Corp., presided. Preceding the meeting motion pictures of the recent driveway of 150 De Soto motor cars were shown.

WORLD BESTOS TO ADD TWO NEW WAREHOUSES

Paterson, N. J., July 28.—World Bestos Corporation, Paterson, N. J., manufacturers of Grafild brake linings, report the addition of two new warehouse locations for the accommodation of jobbing customers in Minneapolis and Kansas City territories. This completes a series of seven warehouses aside from the stock at the Paterson, N. J., plant, making their complete line available for jobbers adjacent to Portland, Ore.; San Francisco, Cal.; Dallas, Tex.; Atlanta, Ga.; Kansas City, Mo.; Minneapolis, Minn., and Chicago, Ill.

MINNOCK IMPROVING

Los Angeles, July 28.—P. F. Minnock, former zone manager for Chevrolet, is making a fine recovery following a serious operation. He has returned to his Beverly Hills home from the hospital. Minnock was zone manager here until illness forced him to take a leave of absence.

OREGON COURT HOLDS THEFT POLICY TO INCLUDE FRAUD

(Continued from Page 1)

alleged facts did not constitute theft, robbery or pilferage. The court held, however, that "where the possession of personal property is obtained by trick or device with an intent on the part of the one obtaining possession to deprive the owner of the property and convert it to his own use, such a taking is felonious and is theft or larceny."

There was no contract of sale, the court said, because the pretended buyer had no intention of paying for the automobile and the seller had no intention of selling it for a worthless check.

A Salesman's Calendar for July

(Continued from Page 7)

9th—Put demonstrator on streets all day, with appropriate signs on it.

10th (Sunday)—Have a car at some public event or at beach or golf club.

11th—Put on gold fish stunt. see June 6 issue of P-E-P.

12th—Visit fire stations, to show and demonstrate the Rockne to the firemen. Demonstrate to the fire chiefs, if possible, as many fire departments are buying Rocknes because of their performance.

13th—Send out letter or mailing piece to a selected list of prospects.

14th—Sell your organization on the value of your service department as a source of prospects.

15th—Check your building for signs, cleanliness, etc.

16th—Check your salesmen on method of giving demonstrations. See March 22 issue of P-E-P.

17th (Sunday)—Have car at public event or places such as golf clubs, etc.

18th—Tag parked cars with an appropriate Rockne tag. See sales department letter No. 51, April 12, 1932.

19th—Take good used cars to factory at noon hour to show to workmen.

20th—Use telephone to follow up letter or mailing pieces of 13th and make appointment for demonstration.

21st—Put demonstrator on street all day with appropriate signs on it.

22nd—Call on local merchants in your vicinity telling them about the Rockne, giving them a demonstration and asking for names or new prospects they may know of.

23rd—Check your used car stock carefully as to condition, prices, etc.

24th (Sunday)—Have car at some public event.

25th—Take house to house canvass of selected list to locate prospects.

26th—Arrange attractive display of accessories in your service department showroom or service station.

27th—Send out mailing piece quoting "service specials."

28th—Telephone owners soliciting service work and names of prospects.

29th—Thorough analysis of prospect file and take necessary steps to increase number of names in file.

30th—Show and demonstrate the Rockne to your police department, particularly the chief and deputy chiefs. Many police departments have bought Rocknes because of their outstanding performance.

31st (Sunday)—Have car at some public event, club, beach, etc.